The Builder.

VOL. XIV.—No. 723.

NOW that the structural question as to the new Westminster-bridge is settled in favour of the course chosen by the engineer, we would ask,—is there any real reason why the work should not go on? At least three of the arches of the old bridge are in a *dangerous* state: the water-way remains with a double obstruction of piers and foundations: piles and staging also encumber the river; and by every winter's delay there is increased chance of some disaster which would interrupt both land and river traffic. It may be thought that in this country little is to be feared from ice. But in the last severe winter, all the arches, except one, were sometimes blocked; and the water rushed through that one remaining channel. The engineer is therefore justified in saying, in the "Observations" printed as an Appendix to the Report and Evidence of last July, that "danger" might result "to the stability of the present structure, and to the navigation, should the suspension of the works be much longer continued, and the fabric be exposed to the contingencies of a winter season, especially as four of the piers of the old bridge have been cut through for the foundations of the new bridge." In 1851, according to Mr. Walker's evidence, the stability of the present bridge in the defective part was dependant upon the centres borne by piles, which last were defective; and he clearly stated his opinion that those "stilts under the arches" were not then proof against ice which might come down the river. Indeed, before the committee of the previous year, in giving a similar opinion, he had referred to the especial weakness which would be found in the piers, if, through accident, any of them should be brought to serve as abutments, in which case, through the fall of a couple of arches, the whole bridge might follow. And in Mr. Page's letter of the 26th March last, appended to the report and evidence, we read that "piles of the staging and gauntrees are subject to accidents from the craft running against them," and that not many weeks earlier "the gauntree for the first arch was in danger of being brought down—in consequence of its supporting piles being struck by a barge, and the first navigable arch had to be stopped for the repairs; while about the same time, a barge was sunk amongst the piles of No. 1 pier:" such casualties, it seems, often occur; and "an accident" might happen, which at least would "close the navigable arches on the Middlesex side." During the progress of the works, by constant watchfulness, more serious accidents may have been prevented. Now, the bridge has been suddenly stopped at the most critical point; the men trained in the operations are lost, and every one connected with the engineering direction has been troubled and fretted, and needlessly called to answer for conclusions made, and re examined and re-made, by committees and commissions, years ago. Meanwhile, over 32,000*l.* of English money are lying idle in the river; and it will cost 10,000*l.* to clear the said river bed,—the 32,000*l.* being blown to dust and rubbish. Add to these values, the loss on nearly 29,000*l.* worth of materials which are prepared and delivered, and on nearly 24,000*l.* worth of "plant." Looking at the actual disbursements,—76,988*l.* 12s. 9d. on the 31st of May last, had been paid; nearly the whole of which, and perhaps even a greater sum, would be *lost* by the mere abandonment of the present plan.* Moreover, *after this loss*, it would cost a far larger sum than what remains to be expended, or than even the whole cost on the present site, to build a bridge on another site,—and probably, calculating upon the use of some of the prepared materials or not. The part of the new bridge in progress would be completed, with a 30-feet *roadway* and temporary footpaths, in twelve months, for 31,700*l.*; the old bridge could be removed, and the remainder of the new bridge 85 feet in width could be completed in two years afterwards; and surely the *onus* of bringing a very strong argument to the case lies with those who postpone the work and stop the way. The argument, however, tends, as we are prepared to show, all in the reverse direction.

Whether assuming the existence of one bridge between Waterloo and Vauxhall, for carriage traffic, or two bridges, it may be considered to have been *decided* that a site for one of the number was the old site of Westminster-bridge; and, as to the diminished headway for the new bridge, that point raised again and again, also may be held to have been disposed of. At least, it is to be observed that, on the basis of such conclusions—deliberate enough, surely—the works lately in progress were commenced, and amounts which we have named were expended. Therefore, unless a *decision* is a mere whimsy of the legislative and official mind, there is only before us this question—are the proposed Government Offices both so paramount and so unyielding that the main routes of London should be diverted for them, or is the traffic belonging to the Offices and the Houses of Parliament, or that belonging to the bridge necessarily to be sacrificed one for the sake of the other? We will enter into the question, however, on any grounds.

Let us premise that it is right to view the improvement of particular quarters of the metropolis, with reference to any main communications, and the whole inhabited area, more than it has been the practice to do, judging from the partial works which usually are undertaken. What can be done in one year by our free and liberal people and government may, perhaps, be little,—perhaps it is better so. Plans, indeed, and those adequate and comprehensive, should be in readiness; and, further, their existence should be remembered when the opportunity arrives.

Progress, we have often observed, suffers from two opposite influences; sometimes there is either prejudice against change, or disregard of the fact that, by lapse of time, new conditions have arisen; but sometimes equally in lapse of time, some conclusion is forgotten, and an ascertained stage of improvement is lost. Thus, the plan of Sir Christopher Wren, for the improvement of the City, aimed at objects which ever since, from time to time, have been sought for in plans designed piecemeal, and therefore at some disadvantage,—as witness the lines of Gresham-street and Cannon-street, as compared with those of the original comprehensive plan. In western London, recent improvements were preceded by suggestions for the same objects made often during the course of many years.* It would conduce to the more efficient prosecution of works, and might save some time, if such plans could be looked to at the proper moment.

The traffic under and over Westminster-bridge has been noted and numbered; gradients have been compared; the heights of vessels and cargoes have been measured; and the flow of the stream and the tides has been tested times enough during the last twenty years, to settle any of the difficulties of the site. The results may be seen in several of the Westminster-bridge reports, where every interest in the matter will be found to have been heard; and only after the careful consideration of every point in the question, inclusive of the site, and the headway—the chief matters now revived—were the works commenced. Sir William Molesworth—who paid great attention to the subject—in his letter to the Treasury, dated 19th April, 1854, adverted to the economy of the old site, regarding cost of approaches, and compensation for property. He also referred to one account of the land and river traffic, which had been taken during five days, when it was found that the average of twelve consecutive hours was 9,200 carriages, of all descriptions, going over the bridge, while only fifty sailing-barges had passed under it. The latter had used an arch of the old bridge, having but 20 feet of headway. The Navigation Committee of the Corporation of London, up to the 17th July last, were arguing for a height of not less than 25 feet. The 20-feet arch (No. 10 from the Middlesex side) has been constantly used by the straw barges, which have the highest cargoes of any on the river,—and with the inconvenience of a narrow arch, and, therefore, practically a diminished headway. At Battersea-bridge, the headway is less, with the further inconvenience of very difficult navigation. One objection made has been to the necessity of depressing the masts considerably,—partly because it is thought cargo might have to be shifted, and partly because it would require a little more labour to raise the mast. But there really would seem to be no difficulty in arranging the cargo in the required manner before-hand; and it has been suggested, that with the addition of a counterbalance weight, the masts might be managed as readily as are the funnels of steam-boats. The consideration of the improved effect of the Houses of Parliament; and the great saving of horse-power by easy gradients, had led the committee of 1853, after hearing all objections, to decide that a headway of 25 feet was not of sufficient importance to justify a large sacrifice of the interests of the land traffic; and thus the headway of 20 feet was finally adopted. This, in the design, seems to be rather exceeded—with the additional advantage of width,—except in the side arches, where the headway may be a trifle less. It was even known, before the scheme for the new bridge had been decided on, whether the communication to the Houses of Parliament was interfered with by the traffic to the bridge, and it was also known that new Government Offices would be wanted somewhere in the locality of Downing-street.

Many who have treated this question of site, have argued that some route from Charing-cross, or from one or other of certain intermediate points, would give the best place for crossing, and would afford relief to the Houses of Parliament. But, these persons by *removing* the route northward, forget how large an amount of traffic

* The valuation of Mr. Charles Stephenson, the Surveyor, we find was as follows:—

For permanent works, examined and approved by the engineer	£26,096	11	1		
Miscellaneous items	6,059	10	5		
Making together				£32,155	1 6
For materials delivered and approved by the engineer				18,957	3 0
For plant provided				23,885	16 6
				£85,009	1 0
And the payments to the 31st May, 1856, were:—					
Under contract				59,982	15 4
For professional services of engineer and staff during contract:—					
Engineer	4,462	3	11		
Staff	1,264	7	4		
				5,726	11 3
Other payments				8,866	17 10
Payments preliminary to the contract:					
Engineer	1,014	18	4		
Other payments	1,397	10	0		
				2,412	8 4
				£76,988	12 9

* See Gwynn's "London and Westminster Improved," 1766, Mr. Sydney Smirke's "Suggestions for the Architectural Improvement of the Western Part of London," 1834, many Parliamentary papers exhibitin Mr. Pennethorne's proposals, &c. &c.

would be drawn a long distance roundabout from the Birdcage-walk, and from Victoria-street, which last was formed with special reference to the old site of Westminster-bridge. Such a route would be still past the Offices, and meeting traffic to the Houses of Parliament, at least up to the time of the completion of a bridge south of the Houses,—when even, looking at the plan of 1846, in the absence of Westminster-bridge, the circuit would be very considerable. The traffic direct, to the other side of the river and the railway stations, from the Houses of Parliament and the Government Offices themselves, with the various private offices which will continue to cluster around the locality, itself deserves to be considered,—as also does the view of the front of the Houses of Parliament,—as we may say, even hazarding the retort that we should be building a bridge for the sake of seeing a building. But taking into consideration the traffic which belongs to Charing-cross, and that to Westminster and Pimlico, there is some mistake in what seems to be assumed that the former preponderates enormously over the latter. At least in 1847, as to the carriage and horse traffic over the bridge during twelve hours, Mr. Pennethorne's account supplied to the committee of 1850, showed the numbers to be—from Middlesex to Surrey,—from Charing-cross, 1,404, and from Westminster, 930; and from Surrey to Middlesex,—to Charing-cross, 1,498, and to Westminster, 974. This was in the winter, whilst the other total above would appear to have been in the summer. Doubtless, the traffic since 1847 has largely increased. But we think the increase is likely to be greatest in connection with Westminster and Pimlico.

Even before the recent outlay, we might have shown that, having the opportunity of making a communication with the other side of the river—one which admittedly had some recommendations—it would have been well to take advantage of the opportunity, seeing that the cost of the work would be comparatively small. The report of Messrs. Rendel and Simpson, indeed, set forth a sum of 384,800*l.* as required for approaches; but those authorities disregarded the fact that the houses on the north side of Bridge-street did not require to be touched, and that those on the south side having to be removed in connection with the Houses of Parliament, had likewise no fair relation with the calculation for the bridge: and Mr. Page, in his "Observations," shows that the only buildings necessarily to be removed were seven houses between the foot of the bridge and Stangate, on the Surrey side, which might be estimated at 45,000*l.* Thus so far as the Westminster-bridge approaches went, the reporters were in excess 339,800*l.* Let it be also observed that the area now occupied by Bridge-street cannot be required to build upon, consistently with the preservation of proper space between the Offices and the Houses of Parliament. The whole of it, indeed, even the buildings on the south side, are shown bounded by that extraordinary red line on the Government plans.

To whatever proposed new site the bridge were transferred, there would still be too great a distance in one or other direction, between it and the next adjoining bridge for carriage traffic. The bridge removed, also it should be remembered, is one of the free bridges, of which London has a number wholly disproportionate to the requirements of the capital, and a number much smaller than are found in places of far less importance, both at home and abroad. The enormous injury to property is not the only consideration; but the mere blocking up of an accustomed London route, however planned originally, is a serious inconvenience. We apprehend that the bridge furnishes the required route between Pimlico and the railway stations in Surrey, at less cost in opening lines of thoroughfare, than the other suggested sites,—desirable as those may be for other bridges,—which, however, would hardly be provided in the same short time. Mr. Rendel, in 1844, as we read in the report of 1846, said—"I do not believe that there is a part of the Thames better suited for a bridge;" and the report of Messrs. Rendel and Simpson, whilst advocating the provision of the additional bridge so often spoken of as required southward, never urged the removal of Westminster-bridge. And Mr. Pennethorne on one occasion, in alluding to the two bridges proposed, one from Charing-cross, and the other from the Horse-ferry, referred to the desirableness of preserving a route of some kind at Westminster,—although he may not have attached the same importance to the *carriage* route that way, that we do.

We do not advocate all the deference which is sometimes paid to vested interests: yet, some will argue that there is a moral justice in preserving what now exists; and the alteration to a roundabout way from what is viewed as a direct route by those interested most nearly, is no ordinary matter. The property of the Westminster-bridge trust, now in the hands of the Board of Works (shown by the plan referred to in Mr. Hardwick's evidence in 1850), in great part bounds the approaches; and some of it, we are informed, was lately sold on the presumed faith of the retention of the bridge, and that heavy compensation would be demanded for any change of site,—and this might be a very important element in the question as to cost.

The chief sites which have been discussed, we may say, have been,—the site of the present bridge, or close to it; a site proposed in 1845 for a bridge a little north of the India Board, with access from Parliament-street; one from the front of Richmond-terrace, or a skew-bridge from the same point to the Bridge-road, to save the cost of approaches on the Lambeth side; a bridge from Charing-cross, approved by the Metropolitan Improvement Commissioners in 1846; one immediately south of the Houses of Parliament, intended to be in a line with the new Victoria-street, which it was a misfortune not to make, as then proposed; and at the Horseferry-road. A plan was also made for the Metropolitan Improvement Commissioners in 1846, for a bridge from the India Board, with curved approaches, dividing the traffic, and giving longer and more easy ascents. For the bridge from Charing-cross (along with which was contemplated as essential, a bridge at the Horseferry, or other adjacent spot) there were originally two plans, but one of these would have had an approach through the gardens of Northumberland House, whereas the other plan, for which indeed the Parliamentary notices were given, had one approach alongside of Northumberland House, and across Whitehall-place, and another from exactly opposite the Horse Guards. With this and the Horseferry-bridge, extensive street improvements, especially on the Surrey side, and a direct route to the High-street, Borough, were designed by Mr. Pennethorne. It is to be hoped this scheme will eventually be carried out.

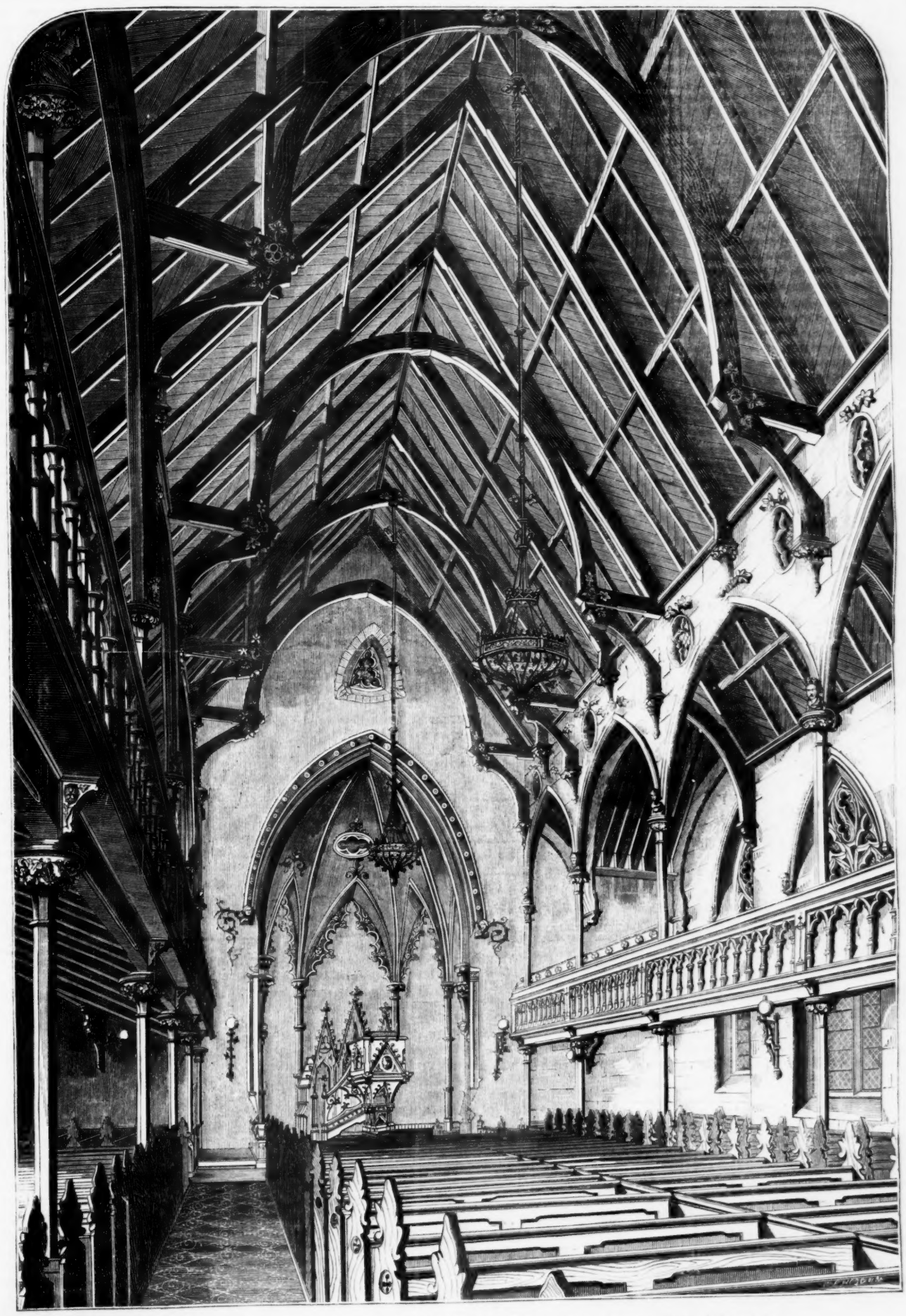
Indeed, we wished to urge that not one, or two bridges, but three are required for carriage traffic between Waterloo and Vauxhall. It is a false system, and one that is injurious to London in many ways which may appear to have no immediate connection with the subject, to stint the means of communication between different parts of a metropolis, as in London would seem to have been done. Looking to mere area, the very heart of London is that portion of the plan which is cut off by the curve of the river between the Blackfriars-road and Westminster-bridge-road. Yet, sites for dwellings for the poor are wanted; and some public buildings, notwithstanding the low level, might be advantageously placed in the locality, were the freedom of access perfect, and divested of a tax. The question of provision of dwellings is one with which London has dallied much too long: some energetic meeting of the evil is required; and as a large number of the poorer inhabitants of the neighbourhood of Parliament-street may suffer grievously by the proposed improvements there, Government may fairly be asked to promote the erection of dwellings of a different class to those which now exist on the Lambeth side,—such as combine a more economic use of the ground with better distribution of plan,—and to provide the requisite direct communication to them. Indeed, so strongly does this argument of the utilization of the Lambeth district prevail with the writer of the article in the "Companion to the Almanack" which we lately referred to, that he seems to rely upon it as his main argument for increase in the number of Thames bridges.

As a measure of police, we believe that much increased free communication between the opposite sides of the river, is a thing in which the whole metropolis should take interest. We apprehend that people living on the Middlesex side of the water, have often before them the idea of an impassable gulf of separation from peoples and things transpontine, unless these are made the *via media* of communication to exoppidan Sydenham, or some snug box at Dulwich or Brixton-hill. Certainly there is some peculiarity in the population on any less important side of a river, which would seem to show the desirableness of equalizing the positions by frequent means of communication. There are the Transteveri of Rome. We know one provincial town—for it is essentially *one* town, though there are two boroughs separated by a narrow stream—where, when an election takes place on one side, you would know of nothing extraordinary in progress; whilst on the other, a similar event is, or was, the occasion of riot or military repression. And we presume the population of the New-cut, the Waterloo-road, and the quadrant space to which we have referred, is not a very presentible sample of London. The tendency of all such localities, with inadequate or restricted means of access, seems to be that they become, to a certain extent, an Alsatia for the lawless—an asylum for the *classes dangereuses*,—to whom there is no particular commercial or financial argument for the saving of *time*,—or who will afford the *time* for the sake of a little freedom from observation. To the really hardworking member of the labouring classes,—and as Mr. Roebuck would say, we *all* belong to that class,—either time or *any* toll may be a matter for consideration in the choice of an abode. But the removal of the exaction on the "pay bridges" would not be a sufficient measure. The great object is to ensure frequent and ready means of unimpeded communication.

Thus, *several* bridges being required, and the site of Westminster-bridge being not only unobjectionable, but, as we believe, a necessary route for one communication, there will be little difficulty on these grounds alone in deciding in favour of the immediate prosecution of the present works. We do not care to urge further, that any other course would be unwarranted by any engineering question, and that it would be disgraceful to our system of legislation and government. We only need say, that if the other proper communications are formed, one from Charing-cross, and one from some well-chosen point south of the Houses of Parliament (which, perhaps, may not be the Horse-ferry), the Government Offices would not be prejudiced, and a most useful medium of communication would be preserved at now very small cost. If, having other bridges, 85 feet be considered an unnecessary width, let the dimension be 50 feet. On that assumption thus stands the case:—The loss by abandoning the present scheme may be taken as not under 70,000*l.*; to which should be added, we believe, a further sum if the "plant," now paid for, be not used. The present portion being completed in twelve months for 31,700*l.* the additional 17 feet would require an outlay of 48,000*l.*—say, making together, for the completion of a 50-feet bridge, with the approaches as they are in the present case, 80,000*l.* in round numbers. While to obtain a similar bridge on a new site, there would be an outlay of 150,000*l.* *plus* the cost of approaches, of which latter *item* some idea may be gathered from what has been said above.

A SMOKELESS FIRE.

It will be of little use forcing manufacturers to burn their smoke, unless the production of it in the fire-places of private houses can be checked also. With a view to this most important desideratum, Mr. John Leslie has patented an arrangement which calls for attention. Air is brought to the front of the fire-place by pipes, and the gases (he maintains there is no *smoke*) are allowed to escape only by an opening close to the *bottom* of the grate, formed by means of a false back. An opening into the flue from the upper part of the room serves to ventilate the apartment. The patentee states that 15 lbs. of coal supply the fire for nine hours, and looks forward to the abandonment of projecting chimney-breasts (a very small flue being sufficient), and to the avoidance of disfiguring cowls.



HIGHER BROUGHTON CHURCH, MANCHESTER.——MR. OLIVER, JUN. ARCHITECT.

HIGHER BROUGHTON CONGREGATIONAL CHURCH, MANCHESTER.

THIS church, now in course of erection, is cruciform on plan, and is divided by cast-iron columns into nave, aisles, and transepts. The chancel is arranged for a communion place, and also for the choir and organ. The galleries are approached on either side by the tower and porch entrances. The iron columns are carried up in one length from the gallery beam, to support the roof, which, by being divided into three spans, is found to be favourable to æsthetic and acoustic purposes. Colour will be introduced in the chancel arch, spandrils, and gallery front. The internal sizes are as follows:—Length of nave, 79 feet 6 inches; breadth, 41 feet; across transepts, 56 feet; chancel, 20 feet. Mr. T. Oliver, jun. of Sunderland, is the architect.

ON THE VARIOUS METHODS NOW BEFORE THE PUBLIC, OF INDURATING AND PRESERVING ARCHITECTURAL STONEWORK.*

Some years since the late A. W. Pugin portrayed, in his "Contrasts," the difference between numerous Mediæval and modern edifices. That ingenious critic might, with equal propriety, have drawn a parallel between the present conditions of the buildings of the ancient Assyrians, Egyptians, Greeks, Romans, and British people: he might even have included the architectural works of London, previous to the beginning of the present century; nearly all of which, so far as the stone is concerned, are in a very perfect state as contrasted with many of the buildings recently erected in this country. The architectural and sculptural works of Nineveh and Athens, which are two or three thousand years old, are much less decayed than the stonework composing the eastern *façade* of Buckingham Palace, before it had been erected a thousandth part of the time. It may be said that the question is one of £. s. d.; but all architects specify and contract with the builders, that "the whole of the materials are to be of the best quality of their respective kinds," and therefore, when a client employs a builder to erect a magnificent structure, he ought not to expect it to be in a perishing condition, like the palace of our Sovereign, before its completion. When the Government ordered the enlargement of Buckingham Palace, it certainly did not entertain the most remote idea that Her Majesty would be inconvenienced by scaffolding, and a host of workmen to repair the defective stonework immediately after its erection, nor that, when repaired, the expensive process of oiling and painting would be resorted to, to avert the progress of decay in the new Caen stone, rapidly mouldering away.

I believe that the knowledge of the most fit and proper materials, according to circumstances, for constructing the exterior of our ornamental edifices, is better understood at this time and in this country than at any former period amongst any civilized people; yet, with all our advancement in art and science, the art and mystery of obtaining good and durable stone for our decorated architecture never was in so low a state, and never was allowed to be so improperly practised. No material is so durable as always to retain its first appearance: the most solid and compact rocks have not such a degree of impenetrability, nor so close a union of the parts which compose them, as to be exempted from ultimate dissolution: there is scarcely a substance which does not exhibit proofs of "weathering," after having been exposed to the action of rain and atmospheric influences for a considerable time: it may be observed even on granite and the most densely compacted silicious rocks. The stonework of many beautiful buildings of recent date is in a worse state of external decay than that of others, which have borne the vicissitudes of summer and winter during six or seven centuries: in some bodies these changes are not so frequent and remarkable as in others, though equally certain to take place at a more distant period. Sooner or later all stone will decay; but whether the ruin be effected in ten years, or in ten thousand, is only a question of relative duration, somewhat in proportion to the labour of appropriation to useful or ornamental purposes, as the parts may be exposed to the weather, either in large or small masses. The same influence is for ever at work, to bring about the disintegration, decay, and final dissolution of all things.

Of all the causes of decay in stone, none are more destructive than variations of temperature; causing disintegration of the crystals or grains from each other by mechanical means. The vicissitudes of heat and cold, and of dryness and moisture, frequently alternating, are more ruinous to the carved parts of a building than either of these extremes constantly operating. However slight the additional heat may be to which a body is subjected, it will expand under its influence, and contract when the temperature is lowered. The thermometer will probably vary 100 degrees from the severe frost of a winter's night to the direct rays of an afternoon summer's sun, which never shines upon north or north-east sides of a building, except very obliquely at rising and setting; but the south and west fronts have the same degree of cold as the north and east during the night, with the additional warmth of meridian splendour daily. Such extremes must tend to loosen the component parts and separate many small fragments from the surface, especially if the mass be made up of different substances, in which case some will expand and contract more, in proportion to their size and density, than others. The test of time proves this to be correct, for in almost all cases the greatest amount of disintegration has taken place where the inequalities of temperature are greatest.

Rain facilitates decomposition, or separation of the molecules by chemical means. If the stone happens to be of a quality likely to be disintegrated by frequent changes of temperature, and to be decomposed chemically through the influence of rain, it will very rapidly moulder away, should both these causes operate at the same time, or nearly so; by no means an unusual occurrence.

An eminent political writer has remarked, that the very best laws are but necessary evils; because if everybody would do what is right and proper, there would be no necessity for laws of any kind. By the same mode of reasoning, if builders would do what they engage to do, and what is right, there would be no necessity for contrivances to prevent good stone from perishing; because no materials but those of the best quality would be used in the erection of a building. This refers especially to cases where a building has been erected with stone supposed to be good enough to show no important symptoms of decay during a reasonable period, say the lifetime of the proprietor, the architect, or the builder. But to the annoyance of all parties, before the edifice has been eight or ten years in existence, large portions of the stonework may be gradually crumbling away; as is the case with the Ionic entrance to Hyde-park from Piccadilly, constructed with Portland stone; and the exterior of Henry VIIth's Chapel at Westminster, refaced with Combe Down, Bath stone. Such, indeed, is the lamentable prospective state of the latter building at this time, that there is every probability of its being, within thirty or forty years, in the same dilapidated condition as it was before the repairs in the year 1808, unless some plan be speedily adopted to avert the decay which I have repeatedly observed, with extreme regret, rapidly advancing on the exterior, in consequence of stone of an inferior quality having been used in its restoration. It appears, therefore, to me, that Henry VIIth's Chapel will afford an excellent opportunity to test the merits of the different inventions for preserving stonework; as there can be no doubt that the progress of decay is very far advanced in that beautiful structure.

Buildings constructed with first-class stones, as Portland, Anston, and the best sandstones, ought not to require the aid of indurating processes to render them durable. No one ever thought of preserving the stone of St. Paul's Cathedral, of Greenwich Hospital, or of other public buildings erected in London during the eighteenth century. There is scarcely a trace of decay in the Portland stone of the Post-office, the National Gallery, or the Royal Exchange; whereas the lower part of the river front of the Custom House, the Ionic Entrance to Hyde-park from Piccadilly, and a few other buildings erected about thirty or forty years since, with a very inferior quality of Portland stone, are certainly in a decayed and dilapidated condition. The best specimen, in London, of Anston stone similar to that used at the Palace of Westminster, may be seen in the two elevations of the Museum of Practical Geology in Jermyn-street, and in Piccadilly. There is also an excellent specimen at the Amicable Life Assurance Office, No. 50, Fleet-street, the elevation of which is not extensive, but the stone is remarkably free from decay. The worst specimen may be observed in nearly the whole of the new buildings at Lincoln's-inn.

In all stone quarries, especially those occupying extensive districts, there are variations in the texture, hardness, and durability of some of the beds, which may account for the stone from certain beds being more readily disintegrated when exposed to weather; thus rendering it objectionable for ornamental architecture. In the Houses of Parliament, some such defective stones have been injudiciously used; but the proportional quantity of inferior stone in the entire edifice being small, as compared with that of a good and durable quality, shows that the failures have arisen entirely from inadvertency, or the want of a more careful supervision of the blocks of stone, and of the particular beds from which they were obtained.

The first stage of decay in the Anston stone appears in spots of a lighter colour than the general surface of the stone: these enlarge and unite, until, in some cases, the whole surface acquires at a distance a pale yellowish brown tint. Upon closer examination, on the face, or more correctly speaking, under an exceedingly thin film on the surface, there seems to be a sort of disruption of the particles, overcoming their cohesion, and a powdery incoherent light-coloured surface is the result. This is easily rubbed off, and it may probably, though not certainly, continue to increase in depth; for some few stones in the Houses of Parliament present unequivocal evidence of the surface having undergone a certain amount of decomposition, or disintegration, since they were finished by the workmen; but this progress of decay appears now to be at least retarded, if it be not altogether at an end. Upon this principle, it is possible that, in many other cases, the present mouldering appearance of certain stones may, at no very distant period, altogether cease.

It would be too much to expect so enormous a quantity of stone, or other natural product, to be all of a quality fit to receive the most refined elaboration, and without any defects; but a question may arise, whether there be more imperfect stone in the construction of the grand edifice just mentioned, than if some other well-chosen stone had been used; Portland, for instance, than which no better material for such a purpose can be named; yet we find buildings constructed with this stone in various stages of preservation, some nearly perfect after being erected probably more than a century; but others mouldering away, only a few years after their completion, merely from want of proper care in selecting the material. These remarks will apply to the stone used at the Parliament Houses, but there are buildings in London and elsewhere, constructed with stone from the identical quarries which have furnished the material for the great work at Westminster, which present scarcely a trace of decay, while the surface of others, erected more recently, is to the eye, even of the casual observer, in a rapid state of disintegration.

The British Isles contain unbounded supplies of building stone, probably as good as any in the world. As it is usually on the surface of the ground in almost every stone district, it may be readily quarried at very little cost, and may generally be transported at small expense to any part of the kingdom. With these advantages, a foreigner might expect to find perfection in stonework in all our towns; our public and other buildings noble illustrations of this source of national wealth, proofs of the skill of our masons and carvers, and of the genius and refined taste of our architects, remaining from century to century in good preservation, deriding alike the frigid rains and scorching solar rays, without need of reparation. This, however, is, we all know, by no means the case: London, and every other large town in our island, abound with examples of material badly selected, improperly exposed, often carelessly worked, and generally discreditable. I readily admit that there are numerous exceptions, but the rule is as I have stated: little or no pains are taken to learn the true relative value of different materials, but to save a small proportion of the first cost, some cheap stone is probably selected for public as well as for private edifices: magnificent club-house, royal palaces, churches, chapels, and cemetery buildings, that were intended to last many centuries, are constructed with the most perishable kinds of Caen or Bath stone; and thus, as time rolls on, we

* Read by Mr. C. H. Smith, at the ordinary general meeting of the Royal Institute of British Architects, December 1st.

find ourselves surrounded with specimens, the greatest use of which now is, to serve as a warning for our future conduct.

Suppose a building to be erected with Caen, Bath, or some other soft cheap stone, that can be worked very expeditiously, and afterwards be hardened, and rendered, at a very small additional cost, indestructible by weather and atmospheric influences; this sounds very tempting, and is no doubt a desirable object to attain. But it should be borne in mind, that the quality which gives Caen or Bath stone a preference among architects and workmen, the facility of working it, also contributes in a great degree to the speedy obliteration of its beauty when exposed to the weather: unless, therefore, the object can be successfully accomplished, the result must be a failure. There can be no difficulty whatever in rendering small specimens of soft stone completely waterproof; but, as with numerous other projects, I foresee almost insurmountable difficulties in carrying out such contrivances upon a large scale, so that they can be practically applied, and completely answer the intended purpose in such buildings as the Royal Exchange or the Palace at Westminster. Among other important advantages, the invention and mode of procedure should be commercially valuable; otherwise the cost of an edifice erected with soft stone, and afterwards indurated, may be greater than if the most durable stone had been employed in the first instance.

It is well known that water, even in its simplest state, acts as a solvent on most things; but when it contains acid, its power of dissolving calcareous substances is considerably augmented. The most perishable kinds of Caen, Bath, or Reigate stone, may be used for decorative purposes in the interior of buildings, where they are protected from the influence of rain or dampness, and may remain for centuries without showing any tendency to decay; but if the same stones should be exposed to the weather, all architectural features would be obliterated in the course of twenty or thirty years. The main object, therefore, to be attended to, in order to preserve stone from decay, is to protect it as much as possible from the influence of moisture, and especially from frequent alternations of wet and dry.

If water be one chief cause of the decay of stone, we must endeavour to saturate the stone with some solution that will repel the water, and thus become the means of conservation. Some years ago the late Mr. Silvester suggested a process for the preservation of stone, cement, and brickwork. It was a solution of soap in the first instance, and afterwards a solution of alum. This plan seemed to answer very well at first, as the water thrown on the specimens flowed off without leaving a trace behind; but the effect entirely disappeared after a time, and the stone became as absorbent as ever. Another scheme has been tried within the last few years, under the sanction of several gentlemen, eminently distinguished for their chemical attainments. A solution was prepared by dissolving flinty sand and potass in boiling water, and called, "silicate of potass," or "water glass:" with this the surface of stone buildings was to be saturated. It had long been known that animals and vegetables had the power of dissolving silica in water; but it is only within a few years that the chemist has learnt to imitate nature in this respect, and to form an aqueous solution of flint. The acquisition of one really new idea in science is likely to give birth to others of far greater importance, and this "water glass" gave promise of the most successful results. Specimens of Caen stone and other soft materials, *soaked* in a solution of "water glass" in the laboratory of the Royal Institution, under the very able direction of the Rev. John Barlow, were very perceptibly indurated after a time, and resisted the action of water and of dilute acid; but having made a similar experiment, in the month of January, 1849, upon a piece of Caen stone, which I knew to be of a perishable quality, and placed it on the roof of a building by the side of a piece of the same stone in its natural state, where they have remained until this morning, in order that they might be fully exposed to the action of the atmosphere and the climate, I now find that the silicated specimen and the unsilicated one are both in the same condition, and equally corroded.

Some caution is necessary before experimenting on a specimen of finished work, because few fluids will remain neutral while in contact with stone; they will either preserve it, or in some degree decompose it. Their chemical action should consequently be accurately ascertained by well-directed investigations.

Most of that numerous class of substances, which are of an oily or resinous nature, are insoluble in water, having little or no affinity for it, and generally repelling it: they may, therefore, be useful in protecting other bodies from penetration by rain or moisture. It is well known that if wood is properly painted, or saturated with linseed oil, or linseed oil varnish, it will not readily decay or rot, but will remain unchanged in the damp earth, or exposed to the weather, as long as the oil continues to be of a fatty or greasy nature; whereas the same timber, in the same situation, rapidly becomes rotten without some such preparation. Nearly all the vegetable fats, which have the property of drying or hardening when exposed to the atmosphere, such, for example, as linseed oil, lose their unctuous consistency after a time, probably by evaporation, and dry up so completely as to leave nothing but a trace of resinous, waxy, or gummy matter. It is, therefore, absolutely necessary, in order to preserve wood from decay, to repeat the oiling or painting process every three or four years.

The first step towards investigating a subject scientifically, is to generalize the materials, and argue upon first principles. Without entering upon a controversy as to the merits of the various patented and other inventions for attaining the objects now under consideration the remarkable similarity of each separate process, when compared generally with the others, is rather surprising. All the vehicles named in the specifications of the patents are composed of mixtures of oily, resinous, or bituminous substances. Now it is well known, that although the various oils differ from each other in certain respects, there are yet principles in them which seem to be common to all. Nearly every variety of fat and oil, whether of animal or vegetable origin, either the hardest tallow, the soft greasy fat of a horse or a goose, or the volatile oil of turpentine, may be separated into two distinct substances by compression or by cold. As regards fats and fat oils, that is, those which do not readily harden and dry, one part, the oleine, will remain fluid, while the other part named stearine, at the same temperature, becomes solid; and this solid portion, in its chemical relations, is closely allied to wax. The volatile and essential oils, such as oil of turpentine, become thick by exposure to the air, and in time assume the character of resin. Bitumens gradually pass from a stateof fluidity into one of viscidity and solidity. A long time is necessary to produce this alteration by the atmosphere only, but if heat be applied, distillation will carry off the fluid portion, and solidification will be much more rapid. Naphtha, petroleum, mineral tar, pitch, asphaltum, shellac, and a certain portion of coal, appear to have had all the same vegetable origin, and vary but little in their elements and constitution from each other.

The following analytical table of substances of an oily or resinous nature, beginning with caoutchouc, which contains the largest proportion of carbon in 100 parts, and arranged successively as the quantity of carbon diminishes, will show that, notwithstanding the various oils and resins differ so much in appearance, they are all composed of a mixture of only three elements—carbon, hydrogen, and oxygen—and many of them are compounded in very nearly the same proportional quantities:—

	Carbon.	Hydrogen.	Oxygen	Equal to
Caoutchouc	90·000	9·120	·880	100·000
Pitch	88·700	9·700	1·600	100·000
Oil of Turpentine	84·311	10·449	5·240	100·000
Naphtha	84·187	13·300	2·513	100·000
Wax	81·094	12·085	6·821	100·000
Tallow	79·420	11·580	9·000	100·000
Spermaceti Oil...	78·303	11·491	10·206	100·000
Olive Oil	77·210	13·390	9·430	100·000
Linseed Oil	76·014	11·351	12·635	100·000
Asphaltum	75·000	9·900	15·100	100·000
Resin	74·773	11·809	13·418	100·000
Ether	66·475	14·1·5	19·400	100·000
Alcohol	52·175	13·500	34·325	100·000

The most conspicuous difference exists in the various temperatures at which the substances above-named become solid or fluid: for instance, most of the oils remain in a liquid state at the usual ordinary temperature of our climate, but at the freezing point, or a few degrees lower, they become solid. Pitch, wax, resin, and tallow are usually hard and compact, but melt at a degree a little above summer heat. These remarkable differences must be evident to a casual observer, yet I think I may venture to assert that the most learned philosophers are not yet able to explain to a certainty why the same elements, united in the same proportions and at the same temperature, should give liquefaction in one case and solidification in another. It is also well deserving of notice that all these substances appear to be, as it were, of one family, possessing a sort of chemical affinity, or general good feeling for each other's company: for example, if we take any two substances named in the foregoing table, and put them together at a certain temperature, they will unite and form one homogeneous body: still further, I am of opinion that if the whole collection were to be thrown into a cauldron, placed over a gentle fire, there would soon be a hotchpotch of a uniform texture, somewhat resembling treacle in appearance. There might be individual exceptions, but I believe the rule would be as I have stated.

Many plans have been practised, or tried experimentally, by different persons during the last few years, in order to get over the necessity and expense of oiling a stone building periodically, for the purpose of averting the progress of decay. To generalize and describe these contrivances in a few words, I may say that the patentees have found that oil, in its simplest state, applied in sufficient quantities to saturate the surface of stone, loses by evaporation nearly all its protective influence in a few years; they have, therefore, adopted the plan of charging the oil with an additional quantity of the solid portion of the same, or of any other kind of oil, such as a mixture of oil and wax, resin and turpentine, or of naphtha and shellac. During the process of saturating a porous stone with any of these mixtures, the fluid holding the solid wax or resin in solution acts as a vehicle to carry the wax or resin, by capillary attraction, into the interior of the stone; and, after the fluid portion has evaporated, the solid which remains serves two purposes: it protects the stone from external wet and moisture, which always tends to decompose soft limestone; and then the solid wax or resin serves to cement the grains more firmly together, and thus changes what was previously a fragile absorbent substance into a compact stone, impervious to moisture, so far as the indurating mixture has penetrated.*

ON THE DECORATIONS AT ALNWICK.

I REALLY felt quite pained at finding my excellent friend, Professor Donaldson, so much annoyed; but I am sure that, on consideration, he cannot but see that there is legitimate room for our differences of opinion. He is so much out of his element when writing harshly, that he says, I am sure, more than he means.

Without wishing needlessly to prolong a controversy on which I have had "my say," I must beg you to excuse my clearing myself of some charges to which I feel bound to plead "not guilty."

In the first place, Mr. Donaldson shows me up as a rude and uncourteous disputant, by stringing together, in a few lines, all the strong expressions I had made use of in the course of a speech and a long paper, including one which I cannot recollect using at all. Now, were I, in the same manner, to collect the *complimentary* terms used in the same speech and paper, I should produce an impression of a directly contrary kind; and I appeal to those who heard what I said, or have read what I wrote, whether I did not, while clearly stating my honest opinions, do so with the utmost respect and consideration for the noble personage from whose conclusions I happened to differ. If we bring forward subjects of discussion, we must not object to the free expression of opinion upon them. If we are debarred from this, it would be better that they should be withheld alto-

* To be continued.

gether. I am not so practised a speaker as my friend, and I admit that the word "*logic*," to which he objects, might be changed with advantage to "*reasoning;*" but he must recollect that, when I first used the word, it was not with reference to the Duke: it was Mr. Donaldson who turned it against him by interposing to explain that he was not stating his own but his Grace's arguments.

In the second place, I must demur to several of the professor's statements; as, for instance, to that about his antagonism to Mr. Salvin (!) which I never so much as dreamed of; to what he says about certain styles of art being "illogical" (!) and "not the true style," expressions of which I am unconscious; and to my having said anything against the specimens of carving exhibited, to which I never alluded. What I said was of Italian art in general, which I did not say had "no relation to nature," but "to the forms of nature with which they (the Alnwick workmen) are surrounded." From the "obliquity" of my position, I did not see the specimens well, and ventured no opinion upon them.

I am, again, unconscious of any expression laying me open to the charge of *exclusiveness*. I did not find fault, in the abstract, with the style adopted, but rather with its proposed *location:* indeed, I said I should rejoice to see in England a work of Canina's, provided it were at Northumberland or Sion House, instead of Alnwick.

I further demur to the statement that I "advocate as a ground-work, not any *domestic* building, but a *religious* one." What I said referred to the *style* selected for the Palace of Westminster. The old palace contained remains of at least four phases of Pointed architecture, among which I suggested that that of the beginning of the fourteenth century,—of which St. Stephen's Chapel was the specimen at hand,—would have been a better guide, *as to style*, than those of later periods. With Mr. Donaldson's opinion upon that specimen I have nothing to do,—it is certainly not that usually entertained, but "*de gustibus*," *&c.!*

Having cleared the subject of these overlayings, which are useless but to perplex it, I will add a little on the main questions at issue, which are these:—1st. Whether in these days, when (to say the least), the architecture of our country in the Middle Ages has been carefully studied, and is extensively in use, it would not be better, while restoring an ancient mansion, to use that architecture for its interior (developing it as we think best to meet present wants), than to produce a building externally, in the English style of the fourteenth, and internally in the Roman style of the sixteenth century? 2ndly. Whether the first-mentioned style is capable of being successfully applied to internal finishings, and of being so developed as to satisfy every modern feeling and requirement? On both questions I reply in the *affirmative;* Professor Donaldson in the *negative;* and both being matters of taste and feeling, I do not see how either can prove our case, for on such questions argument is proverbially inconclusive. To attempt to settle them by practical evidence, seems equally unavailing; for it was as easy to an excellent cleric of the last century to say of the conventicle-ized interior of Llandaff Cathedral that, "as far as it is ceiled and plastered, it *looks exceeding fine*," as it is to assert of the interior of the Doge's Palace, that the (undoubtedly fine) Renaissance fittings (introduced after the fires in the fifteenth and sixteenth centuries) present no "dissonance from the exterior aspect;" and, in like manner, the finest work which we can now or hereafter produce, may be as readily pronounced a failure, as the exquisite interior of St. Stephen's Chapel — "an effete example of corruption and debility!"

I will, then, content myself with saying a word in reply to Professor Donaldson's two leading arguments.

On the first question, he argues that it has been the practice of all ages to make alterations in old buildings, not in the style of the buildings but in that prevailing at the time. I admit this,—but it does not apply to the present case, in which the *exterior* is entirely renewed, and, though in the *style* of the old building, yet, in the main, on a new design. To carry out the theory, the exterior ought also to have been changed in style, as would that of the Ducal Palace had Palladio had his will. We cannot, however, argue from this practice of former ages without ignoring one of the most striking characteristics of our own, which, of all periods in the world's history, is the first in which the arts of former ages have been systematically studied. This characteristic causes our age to be emphatically that of *Restoration*. At former periods they *could not if they would* work in the style of their predecessors: with ourselves it is otherwise. If there is one fact more striking than another in our present position it is this; that we *can* work in the styles of our forefathers of the Middle Ages, and that we *have*, with more or less success, revived them, and more especially the style of the thirteenth and fourteenth centuries. Deplore or decry it as you will,—the fact still remains; and any attempt to ignore its influence on our treatment of our ancient buildings involves a far greater neglect of the characteristics of our age than any of which it is the fashion to accuse those who have had a hand in this revival.

On the second question, Mr. Donaldson brings forward what he must forgive my calling the *ad captandum* and very hackneyed argument of the discordance of Gothic architecture with our present *costume!* Let me ask whether the classic revivers of the fifteenth and sixteenth centuries revived also the *costumes* of ancient Rome; and, again, whether the Roman dresses of these centuries had any more resemblance to those likely to be worn at Alnwick than had those of its first builders? The fact is, that this favourite argument—oft repeated as it is—has no real force in it. Buildings are somewhat more durable than fashions in dress. Would it promote harmony of effect for the congregation at Whitehall Chapel to assume the dress of King Charles's cavaliers, or that at St. Paul's to come out in long wigs and high-heeled boots? Even Somerset House would, on this principle, be out of date, and would want a due supply of pomatum and pigtails to bring it into harmony; while the clerks in the Bank of England should wear a livery founded on the "Fashions for the Season" of the times of the Prince Regent! The costume of our day would, in fact, harmonize with no style of architecture which ever existed, or, I trust, ever will exist; and if we could introduce a style which would shame it into anything like taste we should be doing good service.

What I claim for Gothic architecture is its *perfect* and *ready* applicability to our present requirements; and I boldly and unhesitatingly assert that, of all styles, it is the most elastic, and most capable of suiting itself to the circumstances. The revivers of architecture, in shaping it to their necessities, had no examples of the internal finishing of the ancients to go by. Their guides, in doing this, were no other than the works of their mediæval predecessors, which they translated into their newly adopted style. We, in the same manner, do not wish to revive mediæval dwellings *as they were*, but to produce, in the revived style, *what we want*, translating back into it all which is good in what we now use. "J. F." enumerated, as his decorations, the same list which Canina had given; and that simply because he was of opinion that his proposed style would do the same things more consistently. In a paper I had written some months before this discussion arose, I had given an almost identical enumeration of those which I would recommend for a nobleman's mansion, in the style I advocate, *and for the very same reason.* The majority of these decorations were in use before the classic revival, and were borrowed from mediæval buildings; and I boldly assert that, by availing ourselves of the artistic and mechanical facilities of the present day, we may re-apply them to the revived and re-developed style, with a freshness and vigour far exceeding what we can hope for from Italian architecture; unless we are to expect some wondrous results from this new mission of artists from Rome; and, in truth, I must admit that, if we *are* to have Roman buildings, this part of the Duke of Northumberland's plan of proceeding does appear to me to be one of the best modes of infusing new (or rekindling old) life into it.

GEO. GILBERT SCOTT.

THE SOULAGES COLLECTION OF RENAISSANCE ART.

CARVED STONE CHIMNEY-PIECE.

THE extraordinary collection of objects of decorative utility made by M. Soulages, of Toulouse, and brought into this country by a committee of gentlemen interested in the artistic improvement of our manufactures, is now set forth in Marlborough House for public inspection, and has already been visited by a large number of persons. The interest of the collection is materially increased by what promises to be a very complete and excellent catalogue, which is being prepared by Mr. J. C. Robinson, the Curator of the Museum of Ornamental Art. The part already published refers solely to the specimens of Majolica and Palissy ware, and occupies eighty pages.* The second part will be issued next week. The collection was bought at prices regulated by recent sales in this country, and cost 11,000*l.* exclusive of interest, packing, and insurance; and already individuals have offered to relieve the committee of it at the sum required. The object, however, is to induce the Government to purchase it for the country. Should they decline to do so, it will be sold by auction, to the loss of the committee if it be sold for less than the sum it has cost, and to the advantage of art if it realize more, since the arrangement is that in that case the surplus shall be disposed of in furtherance of some object or objects connected with art, to be determined by the major part in value of the subscribers present at a meeting specially called for that purpose.

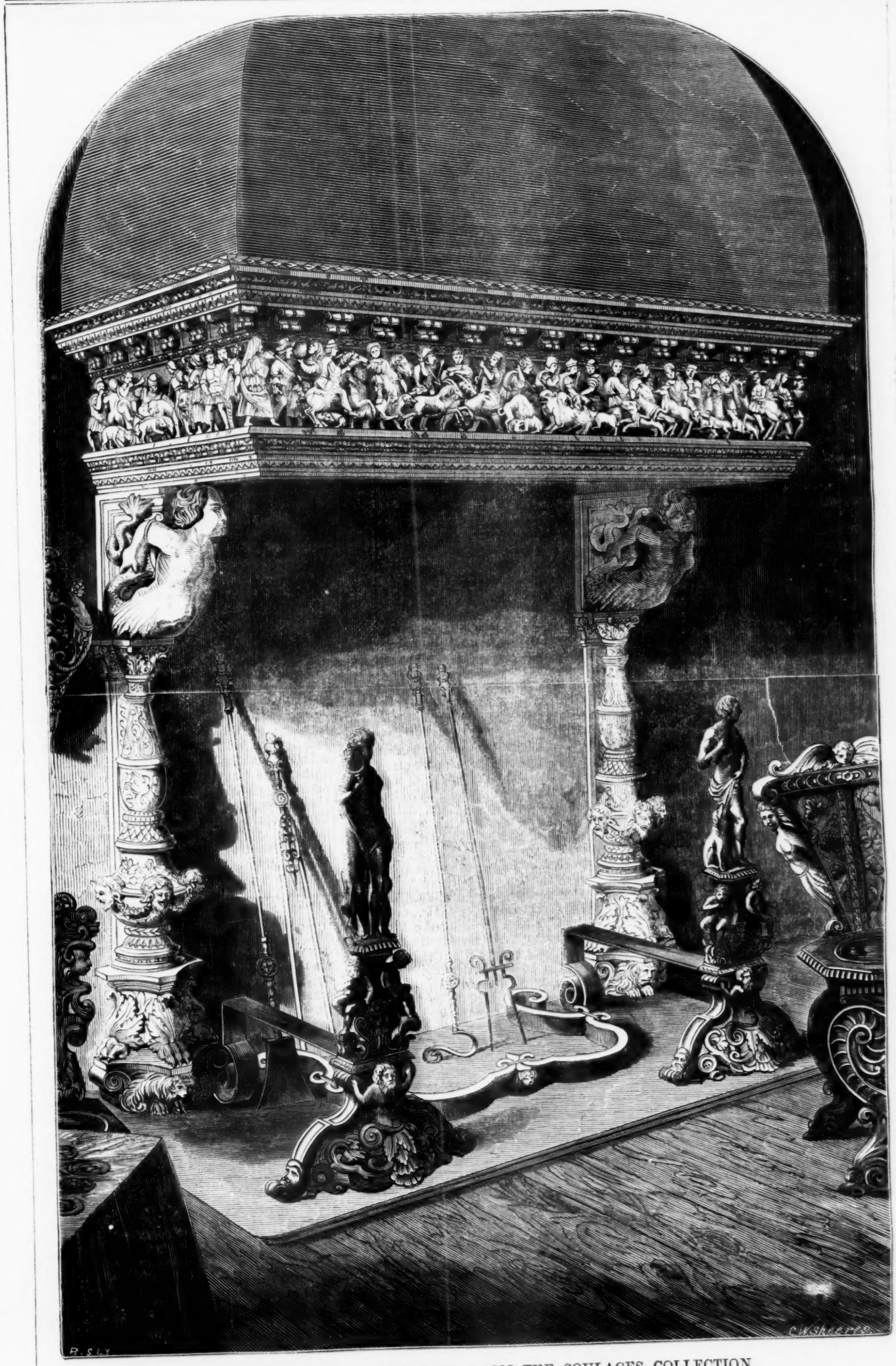
The following are the subscribers:—E. Marjoribanks, Earl Granville, Lord Ashburton, H. Minton, Edward Wood, Robert Napier, W. Maskell, M. Uzielli, Philip Miles, Lyon Playfair, Richard Redgrave, Henry Cole, J. Mayer, H. T. Hope, J. C. Robinson, Capt. Fowke, W. Ewart, R. Barchett, H. Farrer, C. Sackville Bale, W. Chaffers, A. Barker, Richard Fisher, J. Swaby, John Webb, Holland and Sons; Artists, Carvers, and Workmen in the employ of Holland and Sons; Alfred Lapworth, John Jackson, W. B. Simpson, George Trollope, Jackson and Graham, John Crace, J. Sheepshanks, G. R. Elkington, J. Jobson Smith, Thomas De la Rue, Warren De la Rue, Gillow, R. Phillips, S. C. Hall, Dudley C. Marjoribanks, Sir Francis E. Scott, bart. George Godwin, Henry G. Bohn, G. Gilbert Scott, George J. Morant, I. K. Brunel, Sydney Smirke, Johnstone and Jeanes, Duke of Hamilton and Brandon, Robert S. Holford, Christie and Manson, John Dunn Gardner, Joseph Clarke, Owen Jones, R. J. Spiers, Hanson and Wright, Hunt and Roskell, Council of the Society of Arts, J. J. Mechi, Joseph Rodgers, James Dixon, Mappin, Sir Henry Meux, bart. Sir John Marjoribanks, bart. T. M. Whitehead, Titus Salt, J. W. Fraser, C. Drury E. Fortnum, W. Wilson Saunders, Edward Chapman, the Marquis of Hertford, and Felix Slade.

The collection consists, in the whole, of nearly 800 objects, and includes, besides what we have mentioned, Venetian glass, knives and forks, spoons, coffers, and ivories, enamels of Limoges, bronzes (chiefly decorative utensils), Italian sculpture, Della Robbia ware, painted glass, medals, chiefly Italian, of the quattro and cinque-cento periods, a few pictures, textile fabrics, and decorative furniture.

We must not be understood as expressing unlimited admiration of all the works here collected: they have the faults of the period, some of them in excess. Compared with works of the mediæval times, and of Gothic artists even of their own period, they are found wanting in some most important qualities; nevertheless, they present, as a whole, a deep mine of beauty, most valuable illustrations of the history of decorative art, and admirable results of processes, in the practice of which we are now miserably inferior, even if we have not altogether lost them.

With these few general particulars, and a view of one of the most interesting objects in the collection, a carved stone chimney-piece, set up in the first room, with its bronze andirons, or fire-dogs, of great beauty, we must content ourselves on the present occasion. The chimney-piece, it will be seen, originally followed the shape of the hooded fire-places, of the mediæval period: it came from Padua, is attributed to one of the Lombardi, and was executed quite at the beginning of the sixteenth century. On the face

* Published by Chapman and Hall, London.



CARVED STONE CHIMNEY-PIECE, FROM THE SOULAGES COLLECTION.

Commencement of Sixteenth Century.

of the upper portion of it are represented a boar-hunt and other sports, set forth by a multitude of small figures and animals, admirably grouped. The expression given to some of the figures is excellent, and the whole is full of life and energy. The caryatidal figures which carry the hood are also admirably carved. The andirons of bronze, from the Palazzo Petinelli, at Padua, show the arms of the Barberigo family, and are of a very high class of art. The carved marriage coffer in this room, enriched with subjects from the history of David, and the carved bellows hanging near the chimney-piece, should not be overlooked: but to these and other works in this collection we shall find an opportunity to return.

ARCHITECTURAL EDUCATION.

The following memorial has been addressed to the Council of the Royal Institute of British Architects:—

Gentlemen,—The proceedings of the Institute during the last few months, with reference to certain propositions bearing upon the question of our professional education, seem to warrant the belief that the time has now arrived when this question itself, in its simplicity, may be pressed upon your attention, as the most vital consideration of our policy and the root of all reform.

It is in pursuance of a natural law that a profession like ours comes to establish the organization of a guild. It is no less a rule, that in course of time the attention of such a guild becomes fixed upon one object as in a manner the primary one of all,—the essence of the craft, and the foundation of its honour,—namely, the education of its youth. And in an age when a scientific system of tuition has become the recognised basis of all progress and power, this process of events must only be the more inevitably certain.

The present generation has beheld the guild of architects gradually consolidated in the form of the Institute. As a profession also, we have meanwhile increased almost unprecedentedly in numbers and influence. The association of architecture with the delineative arts in the Royal Academy of George the Third, we have seen gradually undermined as a merely traditional and unsubstantial connection. We have established an annual Exposition of our own, already of singular promise. Even in emulation with our brethren of foreign countries, we have met with that unexpected success which is the index of extraordinary latent power.

But the more remarkable our progress, the more pressing does one question become. What of the education of this imposing profession? What is to be said of the basis of solid knowledge, without which all this display of energy is but matter of anxiety rather than of triumph?

The Institute may have done much for the advancement of learned research, but has it done anything for the establishment of simple education?

The absolute need of thorough systematic instruction for any vocation of skill in the present scientific age, is to be assumed as an axiomatic principle.

The striking absence of tuition of this kind in our profession is too well known to be matter of argument.

The valuable lectures of University College are, no doubt, paving the way for a better system, but is it impossible for this description of education to emanate from the head-quarters of the profession itself?

The object of the present memorial is to beg that the attention of the Institute and the profession generally may be earnestly turned to this question.

Lest the appeal should fail for want of a definite proposal, I venture to suggest a mode of proceeding in the appended memorandum. I hope the wisdom and experience of the Institute, and the solicitude of the profession at large, may thus be, at least, directed to the immediate discussion of the important subject involved.

This duty ought no longer to be delayed: it is only to be feared that it has been too long delayed already.

Robert Kerr.

Memorandum of the Proposal above referred to.

The range of essential study for the architect may perhaps be set forth as follows:—

1. Natural Philosophy; or the abstract sciences involved in building.
2. Building; or the science of the operations of the builder.
3. Plan; or the arrangement of buildings and their appliances.
4. Architectural Design; or the Fine Art; historically and critically examined.

Drawing (to be more elaborately acquired) and Estimating would probably complete the scheme. Simple Mathematics ought to be a preliminary.

Presuming the establishment of professorships of these several branches to be deemed premature, and the alternative adopted of prescribing a course of private reading, the council might draw up a list of books, which, in their judgment, would convey a complete system of education.

Those who, upon examination, prove themselves perfect in the prescribed course of study, and otherwise competent, as may be laid down, might be acknowledged as members of the Institute by the title of Graduates, to rank as Fellows when of seven years' practice.

With regard to the pecuniary charge for membership of any public guild, this is properly a tax to meet the expenses of maintenance. Any demand beyond a fair share of such expenses ought only to be made to meet particular circumstances. If the subscription of Graduates, therefore, were reduced to this rate, while other members continued to contribute as at present, this might serve as the least invidious encouragement to Graduates, and without creating difficulties in the way of others.

CHURCH-BUILDING NEWS.

Ipswich.—The new church at "California" is now progressing. The roof, which has undergone a complete alteration and has been strengthened, is nearly covered in, and the buttresses have been so altered that additional security has been given to the fabric.

Oxford.—The chapel of Balliol College, the rebuilding of which was commenced in the Easter vacation, is now complete, with the exception of the roof. The new chapel possesses features new to Oxford, being built in alternate courses of red and white stone, the proportion of the red to the white gradually augmenting as the building rises.——The chief corner stone of the new chapel of Exeter College was laid on 29th ult. The stone was in the first course of the Bath stone plinth, and distinguished by three Maltese crosses inclosed in circles, symbolising the Holy Trinity, and placed at the south-east corner of the sanctuary, at the commencement of the polygonal apse. Mr. Symm is the builder, Mr. Buckeridge the assistant architect, and Mr. Scott the architect. The style is Geometrical Decorated; the plan, a parallelogram, with an apsidal termination, divided into ante-chapel, chapel, and sacrarium. The entire length from east to west is 72 feet, breadth, 30 feet; and height to external ridge, 80 feet. The turret for the bell is to be of oak, covered with a lead spire; the height to the top of which is 130 feet. The whole of the interior is to be groined with stone. The edifice will form the whole of the south side of the large quadrangle, occupying the site of the former chapel and rector's lodgings.

Brentwood.—The reopening of Brentwood Church, after its enlargement, took place on the 4th inst. The additions consist of a chancel, 37 feet by 18 feet 6 inches, with transeptal aisles, arranged with cross gables. All the piers, arches, dressings of the windows and other parts, are of Bath stone; whilst the facing of the external walls is of Kentish rag. The roofs are designed with reference to sound, and present vaulted and boarded surfaces between the timbers, which are wrought. The chancel roof is decorated in colour, by Mr. Castell, of London, having over the altar the four Evangelists. Messrs. Ward have fixed a three-light east window, as a memorial by the incumbent to his father, the late Sir John English; and the two easternmost windows of the aisles are also filled with painted glass. The east window contains groups from the history of our Lord, whilst the other window contains canopied figures of St. Luke and St. John. The architect employed on the enlargement was Mr. Joseph Clarke. The carving throughout has been done, under the direction of the architect, by Mr. Daymond; and the whole of the works have been carried out by the contractor, Mr. John Hammond, of Great Warley.

Maidstone.—At a public meeting of the working classes and others, recently held at Maidstone, it was unanimously resolved to support the movement for the erection of a new church in Stone-street of that town. A design had been prepared by Mr. Whicheord, architect. Upwards of 2,100*l.* have already been subscribed.

Wimborne.—The reseating and heating of the Minster are about to be carried into effect.

King's Norton.—The repairs or restorations of the church are nearly completed, and the edifice was reopened for service on Sunday before last. A new stone pulpit, new oak reading-desk, and a lectern have been provided. The pillars and arches are all scraped, and the south aisle has all its windows fitted with new mullions and tracery, and scriptural subjects in stained glass. The porch has had the ceiling removed and the timber stained, exposing a good old oak roof, the tie beam of which has the date 1659. The stonework has been executed by Messrs. Bennett, of Birmingham; the glazing by Mr. G. B. Newbould, also of Birmingham; and the woodwork by Mr. Isaac Clulee, King's Norton.

Shrewsbury.—A new general cemetery for the Shrewsbury parishes and Meole Brace was formally consecrated by the Bishop of Hereford, on Tuesday in week before last. The cemetery is situated on an elevation about a mile from the centre of the town, and embraces an area of twenty acres. The situation is described as a fine one, and the soil and understrata dry. The new buildings will form a group, comprising two chapels, two vestries, a double corridor or cloister, surrounding a small quadrangle, a lych or entrance gatehouse, and, right and left, the officers' houses and the board-rooms. In the centre will be a tower and spire, 130 feet high. These buildings, &c. are situated at the angle nearest the town, and are on the highest portion of ground. The chapel is 45 feet 6 inches long, by 20 feet wide, with south aisle, 34 feet by 9 feet 6 inches, and, under the tower, a space appropriated for a vestry, opening into the church, 14 feet by 10 feet. The east end has a five-light traceried window. The aisle and clerestory windows are two-lights each, traceried. The interior of the chapel is of dressed white freestone. The roof is lofty, and timbered in deal and oak. The windows are glazed in tinted glass, to be gradually substituted by memorials in colour. The floor is of plain quarries: the benches, capable of holding from seventy to eighty people, are plain deal. Under the chapel is a vaulted crypt, entered from the outside. The Dissenters' chapel, although adjoining the Episcopal, is in all respects distinct, though the same in construction: it is 34 feet long, by 20 feet wide, with a south aisle of a single bay and vestry. This chapel is not yet completed. On the north side, and opening to the church by a lofty arch, is the tower, forming the centre of the group of buildings, and now nearly 60 feet high, upon which there is to be a spire. The lych-gate house is to be within 34 feet long, by 15 feet wide, with arched openings and doors at each end, sufficiently high to take a hearse: on the side towards, and communicating with, the corridors are three arches on octagonal pillars, all of dressed white stone: the outer wall has traceried and glazed windows. The roof is to be open timber work and tiles; the floor of blue bricks, with stone kerbs or rails for the carriage way. The corridors are also of dressed white stone, in and out, and form three sides of a square, 62 feet wide, by 72 feet deep. The passage way is about 10 feet wide, opening upon a small centre quadrangle by an arcade: the roof is of open timber and slated. On the right and left of the entrance, and communicating with the corridors, are the officers' houses and board-room, yet unfinished. The style is Perpendicular, and the construction of the walls throughout is of stone. The Redhill quarries have furnished the materials for the foundation and interior of the tower walls, and Grinshill the facings and dressed work. The design and superintendence of the whole of the works on the grounds and erections are by Mr. S. Pountney Smith, of Shrewsbury. Mr. G. Garratt is clerk of the works, and Mr. Owen superintendent of the grounds. Messrs. Groves have constructed the boundary walls. Messrs. Watkin, Parker, and Phillips, have executed the ground work and walks; and Messrs. James Dickson and Son, of Chester, have furnished the plants. Mr. Treasure, of Newport, is now the contractor for the buildings. The works are to be finished by April or May next.

Barrow.—A small painted glass window, the work of Mr. David Evans, of Shrewsbury, has recently been placed in Barrow Church, near Wenlock. A brass tablet underneath the window states that this window was inserted by George Weld Lord Forester, in memory of Elizabeth Lightband, and in grateful acknowledgment of her faithful and valuable services as housekeeper at Willey-park during a period of thirty-two years.

Rugby.—On Sunday before last, the Rugby School Chapel caught fire in consequence of the

overheating of the flues. On the floor being removed, it was discovered that the woodwork beneath had been smouldering for some considerable time. The fire, which was lighted on Friday, must (from the appearance of the charred wood) have immediately ignited the woodwork, but the stoker, fortunately, neglecting his duty, the fire became extinguished, or the calamity would, in all probability, have occurred in the night. The stained-glass window, in memory of the Rugbeans who fell in the late war, being in immediate proximity to the spot where the fire occurred, would doubtless have been destroyed.

West Derby.—The chancel window of the new church of St. Mary, representing six principal subjects from the life of Christ, in medallions, upon mosaic diaper grounds, with borders of the Early Decorated period, was the gift of Mrs. Thornton; designed and executed by Messrs. Pilkington, of St. Helens.

PROVINCIAL NEWS.

Kidmore End, Caversham.—The new school-room at Kidmore End, in the parish of Caversham, was opened on Saturday before last, by the Bishop of Oxford. The new school-room is from a design by Mr. Arthur Billing, of London, architect. Mr. J. Dormer, of Caversham, was the builder.

Portsmouth.—The new water company have made arrangements for the purchase of the Farlington old water-works, at 42,000*l.* Most of the shares of the new company have been appropriated.

Cardiff.—On Saturday before last, just after the workmen had left off work, at a house in Bute-road, it fell down, and was so completely destroyed, that not one stone remained upon another in its proper position. All the joists and rafters, and two ladders, stood on their ends in the midst of the heap of ruins. The foundation of the adjoining house also gave way, and the building opened from bottom to top, so that it stands in the greatest jeopardy. The house belonged to a mason, and the adjoining one was to be taken down. The houses had been built on a spot formerly called the Brickyard-pill, which was a few years ago a deep pool of water.——A serious accident from the fall of a new parapet, in Bute-road, happened on the same day, to a man while plastering it.——We are asked to state, that the design of the Cardiff Post-office, is by Messrs. Prichard and Seddon, of Cardiff and Llandaff, not by *Mr. John Seddon.* The building is not "*Byzantine*," it is said, "but simply common-sense architecture of brickwork."

Kerry. — A correspondent of the *Shrewsbury Chronicle* calls the attention of the the authorities to the sanitary condition of this village. An amount of filth which would be a disgrace to be seen anywhere, it is said, is left to accumulate in front of the doors, consequently scarlatina, in its foulest form, has been engendered, and has affected with unusual severity all ages and conditions, and left them in some instances in a most deplorable state.

Sheffield.—The opening of the Exchange and News-room here took place on Tuesday in last week. The building has been erected, from designs by Messrs. Weightman, Hadfield, and Goldie, by the Duke of Norfolk, and terminates the pile of buildings lately completed for the butchers' and poulterers' market, occupying the façade towards the old Haymarket. The Exchange-room occupies the first floor, and is approached by a flight of steps, 5 feet 6 inches broad, inclosed after the manner practised in Italy, having a domical raking ceiling. The entrance vestibule is laid with Minton's tiles. The room is entered by folding-doors. Its dimensions are 57 feet long, 30 feet wide, and 20 feet high. It is lighted by six windows of plate-glass. The internal arrangements are simple. At the end of the room opposite the entrance is a small apartment fitted up by the Telegraph Company, in which the subscribers may write and despatch their messages to all parts of the globe. The fittings were done by Messrs. Drury and Smith, of Sheffield. The exterior of the building is Darley Dale stone. The façade consists of a centre and two receding wings. The former has an order of Roman Doric pilasters, with entablature proper: the windows have architrave mouldings and cornices. The whole rests on an arcade of three openings. In the wings are the lower entrances to the markets, and in the circular corners are the entrances—the one to the Exchange in King-street end, and the Telegraph Company's in the old Fruit Market. Over the market entrances are two niches, with figures carved in stone by Messrs. Lane and Lewis, of Birmingham, representing Mercury and Vulcan. The builders were Messrs. Craven and Fewsdale, Messrs. Drury and Smith, Messrs. J. and C. Ellis, and Messrs. Wilson and Co. Clerk of works, Mr. William Abbey.

Shields.—At a meeting of the River Tyne Commissioners, on the 13th ult. says the *Shields Gazette*, an application was made by the Shipowners' Society of South Shields for a copy of the contract with Mr. Lawton for the erection of the Tyne piers, and of the plans of the works now in progress. The progress the contractor, it continues, was making was generally felt to be unsatisfactory, and as the shipowners of this port contribute largely to the pier fund, it was thought by the society to be no unreasonable request to be informed on what terms the commissioners had made their contract, and what were the nature of the works to be erected. The commissioners declined to give a copy of the contract. The following abstract is then given to show the amount paid by the shipowners towards the building of the piers, and other particulars:—

Total piers' dues collected from 17th June, 1856, to 12th Nov. 1856	£48,933	16	11
Interest on same	1,730	18	5
Total	£50,664	15	4

EXPENDED.

Trow Rock purchase	£6,000	0	0
Railway on Herd Sand	7,318	11	5
Mr. Layton on account of contract	11,000	0	0
Expenses of Act of Parliament, engineering expenses, collecting dues, paid for weighbridge, and miscellaneous	6,303	12	1
Cash in bank	20,042	11	10
Total	£50,664	15	4

THE CONNECTION OF THE METROPOLITAN RAILWAYS.

THE travelling public still suffering from the want of connection between the various railways which have a terminus in London, it is somewhat surprising that companies have not directed their attention to the large open space of ground on each side of Victoria-street or New Farringdon-street, from Holborn to Clerkenwell, as a site for a grand central terminus: no such opportunity is likely to occur again of obtaining so large a space of uncovered ground in so central a position in London. The access to Surrey is wide and good by Farringdon-street and Blackfriars-bridge. The Holborn viaduct should be part of the plan, and would form a good access from the City and West-end, and by King's-cross and the New-road, the way to Regent's-park and Bayswater is clear and open. The ground might be obtained at once by treaty with the City without an Act of Parliament.

THE ARCHITECTURAL EXHIBITION.

THE opening *Conversazione* of the Architectectural Exhibition will be held on Tuesday evening, the 16th, in the Suffolk-street Galleries, and will, doubtless, be well attended. Earl de Grey will preside, if well enough. The first lecture will be given by Professor Donaldson, on January 6; his subject being "The Architectural Magnificence of Rome." The Rev. Mr. Petit will lecture on the Tuesday following. We would point out that by an almost nominal subscription (2s. 6d.), admission may be had to a very promising series of lectures, and to the Exhibition for the whole season.

Through the success which attended the Exhibition last year, the committee were able to pay off part of the outstanding debt to the treasurer; and if they receive proper support this year, support for which an ample return will be made to subscribers, apart from the satisfaction of contributing materially to the advancement of architectural knowledge, the debt will be cleared off, and the Institution will be placed on a sound and permanent footing. Every architect and lover of architecture should feel it his duty to move personally in the matter. It is of no use saying, "I am anxious for its success;" without an effort to ensure it.

SAXELBY CHURCH IMPROVED.

THIS pretty little spire church, situated about five miles on the north-west of Melton Mowbray, is now undergoing a complete restoration. The nave roof has been replaced with a regular *tie-beam* affair, slated and plain ridge. The tower has been partially cut back, and the *worst* places made good with *Roman cement dusted with sand.* The windows, mouldings, wreathings, and plinths, which are of Ketton stone, and covered with lichen, have been most religiously despoiled of it by dry rubbing, and the crocketed spire is threatened with the same process whenever weather will permit. The old porch has been rebuilt of the Upper Wurtnaby *marl* stone (celebrated for its *lasting* qualities), laid "random-wise," and relieved with minute Bath-stone dressings. The chancel is being rebuilt in the same *style.* The whole of this interesting work is being carried on by a gentleman who is both architect and builder. Lord Aylesford is patron of the living, and owns the whole of the land in the parish, and is a large contributor towards the rebuilding of the church. IMPROPRIATOR.

THE METROPOLITAN DRAINAGE QUESTION AND THE BOARD OF WORKS.

A DEPUTATION from the Metropolitan Board of Works, headed by the chairman, waited on the Chancellor of the Exchequer on Thursday in last week, on the subject of the borrowing powers of the Board. They asked the Government to aid them in a loan of 4,000,000*l.* for the purpose of effecting the main drainage and some improvements necessary to the health and comfort of the inhabitants, including the formation of some of those parks and open spaces for which we have so long contended, and also the opening of the new street in Southwark, the repayment of debts incurred by the late commission, &c. The loan it was proposed should be advanced at a rate of not less than 1,000,000*l.* per annum, and the repayment extended over a period of fifty years, on the security of the rateable value of the property of the metropolitan area, now estimated at 11,150,000*l.* and yielding now from three to four hundred thousand pounds a year. The Chancellor of the Exchequer, at the end of a long conversation, said that the Government had no power of contracting a loan without Parliamentary authority, and suggested that the best way to bring the matter to issue was for the Board to put their proposition in writing.

Another deputation as to the metropolitan drainage scheme was on the move at the end of last week,—in this instance from the Corporation of Gravesend and the parishioners of Erith, to the General Purposes Committee of the Court of Aldermen of the City of London, at Guildhall, on Saturday last. The deputation included the Mayor of Gravesend and the Chairman of the Gravesend Improvement Commission, Sir Culling Eardley, Mr. C. A. Smith, of Greenwich, Solicitor, and other gentlemen. The purpose in view was to confer with the City authorities, merchants, and others, as to the carrying of the London drainage down to the estuary of the Thames partly at the national expense, and as to a public meeting being held on the subject. Sir Culling Eardley was spokesman, and urged the agitation of the question in the City, the opening of the Guildhall to engineers who might wish to lecture on the subject, the duty of the City authorities, as conservators of the Thames, to protect the interests and the comfort and health of the residents on its banks, &c. Sir Culling represented that the scheme for disemboguing the whole of the concentrated sewage of the metropolis near Erith would be ruinous to the favourite resorts of the citizens down the river, even from the mere force of the public feeling against such a nuisance; that it was sufficient, in fact, to place the Thames under a sort of quarantine at foreign ports; that it would obstruct the navigation; that it would destroy the metropolitan market for fresh fish, which at present were brought up alive in well-boats, &c. &c. He had considered Sir Morton Peto's scheme, and was now much more favourably inclined towards it than he had been. Finally, Sir Culling incidentally expressed a hope that the Government would appoint a suitable

commission to rough-hew the subject before Parliament met, and that then it would be referred to a committee of the House of Commons.

Mr. Alderman Wire, the chairman of the committee, stated, in reply, that the City, as conservators of the Thames, were interested to see that in any plan for the purification of the Thames the health and comfort of the inhabitants on its banks were duly provided for, and that no obstruction be caused to the navigation; that the subject would receive the attention of the committee, and a communication would be made to the deputation thereon.

The main drainage scheme was again discussed at a meeting of the Metropolitan Board of Works on the 9th, and was adjourned till Tuesday next, when, as we understand, a fierce onslaught will be made on the present plan.

The new Street through Southwark.—The line proposed by the Board through Southwark is not popular, nor are we surprised. We must look to it next week.

CEMETERY COMPETITION.

WHATEVER punishment might be deemed due to "E. G. B." for his humorous poetry, on the terms proposed to architects by the Castleford Burial Board, architects generally are much obliged to him for the verses, and to the *Builder* for kindly circulating them. The immense waste of labour called for by the cemetery competitions, and the absolute throwing away of so many architects' time, has afforded much pleasure and amusement to Burial Boards, and it is only just to expect that there should be some inclination evinced to check the evil; some little retaliation offered,—some show that "Britons never will be slaves," unless under very peculiar circumstances.

The rank injustice of these competitions shows itself in this fact of frequent occurrence, viz. that the sober-minded judges of the designs, dazzled with the gay tints of the highly-finished sets of drawings, doubt, during their decisions, of the capacity of architects who get up such picturesque effects, to prepare simple sections and specifications. The consequence of this mistrust is, that after the Board have admired the landscape and perspectives awhile, the premium, three, or four, or five pounds, is paid, the unsuccessful designs are returned, and the Board apply to "our own" local architect for fresh plans, "for we shall be safe with him."

Meanwhile "our own architect" has been mentally taking his notes on the competition designs, and whatever pleasing feature is noticed in any one of the buildings, the Board "can of course have that" in the new design. It is pleasant to reflect that, in some recent competitions, three or four designs only were given in, and that the Boards chose the worst.

ARCHI.

SCHOOLS OF ART.

Burslem.—The annual meeting of the Burslem School took place on Wednesday in last week, the president, Mr. Child, M.P. in the chair. The local interest in the school appears to be sustained. An exhibition of student-works covered the walls of the Wesleyan Chapel School-room, in which the meeting was held. Mr. Child and Mr. Ricardo, M.P. addressed the meeting. In the report the committee congratulated the friends of the institution on the improvement made by the students during the year. A modelling-class had been established through the contribution of Mr. Child. The day-schools, participating in the advantages of the central school, continued to yield satisfactory evidence of steady advancement. After dwelling upon the necessity for a more suitable school-room, the report closed by setting forth the importance of maintaining the school in vigorous operation. From a statement of accounts, it appeared that Mr. Child had given a donation of 40*l.* and that the total income, including the subscriptions, 164*l.* 0s. 6d. and the students' fees, 62*l.* 9s. amounted to 276*l.* 9s. 6d. The expenditure amounted to 277*l.* 10s. 6d.

Swansea.—The annual meeting of the Swansea School was held in the Theatre of the Royal Institution of South Wales, on Tuesday in last week, the Mayor in the chair. In opening the proceedings, the Chairman said this was the first occasion of his being present at a meeting of the School of Art, and he regretted that it was so; but of late his sympathies had been much enlisted in favour of this institution, from facts that had come to his knowledge of the great benefit derived by persons who dated their present prosperous position from the time of their becoming pupils in the School of Art. He trusted that these facts would obtain publicity, and interest others in the prosperity of the school. The report (the fourth annual one) congratulated the meeting on the continued success of the school, although, from the withdrawal of two public classes, the Normal and the National Schools, to the former of which a private teacher had been appointed, there was a falling off in the number of pupils and the amount of receipts. There was an increase of subscriptions. At the last exhibition more than 1,000 persons had attended, and great interest was taken in it by all classes. The number of students receiving instructions in art during the last year in Swansea, including the public schools, had been nearly 500. The master, Mr. Hammerton, addressed the meeting, as did various other gentlemen, and the prizes were then as usual distributed.

Carlisle.—The annual meeting of the subscribers to the Carlisle School of Art was held in the Town-Hall, on Monday before last. The gentlemen present, says the *Carlisle Journal*, were Mr. Irving, Mr. I. Cartmell, Mr. Hannah, Mr. Jas. Steel, Mr. D. M'Alpin (hon. secretary), and Mr. Pozzi (master). Mr. Irving was called to the chair, but the Mayor afterwards entered, and occupied it. The report (the second annual one) stated that Mr. Brook had resigned his appointment as master, and the Department of Science and Art had recommended Mr. William Pozzi, who was accordingly appointed to the vacant office. The income had exceeded the current expenditure, and, therefore, the school had been self-supporting. There was a debt, however, amounting to 56*l.* 2s. 4d. for fitting up and furnishing. The committee urgently appealed to the public for funds to pay it. The ladies' morning-class had improved to some extent, though still comparatively small. There were now 67 pupils receiving instruction at the Central School of Art, and 378 pupils were taught in the various public and private schools attended by the master. The year's revenue amounted to 75*l.*

COMPETITIONS.

Bristol Pauper Lunatic Asylum.—The committee of the "New Pauper Lunatic Asylum for Bristol" wind up their advertisement in the *Times* with the following (I think) novel condition:—"The committee do not bind themselves to accept the *best* or any plan of the said building." Now, as the generally accepted end of a competition is to arrive at the *best*, we can but admire the honesty and foresight of the committee, who, doubtless, have already settled who is to be the lucky man; and as ten to one he will be far from the best, they thus take all cause of growling from the disappointed competitors. As they never bound themselves to accept the best, so nobody can complain even if they do choose the worst. It is the refreshing candour of the advertisement that induced me to draw your attention to it.

THE NATIONAL COLLECTIONS.

WE understand that Mr. Sheepshanks has presented to the nation the whole of his collection of paintings and drawings, for the purposes of public instruction in art. Mr. Sheepshanks considers that a crowded thoroughfare is not a suitable site for quietly studying works of art, and has stipulated that his collection must be kept in the neighbourhood of its present locality, at Kensington. Mr. Sheepshanks has signified his readiness to hand over immediately the whole of his collection, which is especially rich in the best works of Mulready, Landseer, and Leslie, and contains fine examples of the principal modern British painters in oil.

According to the belief of the *Globe*, a Royal Commission will shortly be issued, appointing Lord Broughton, the Dean of St. Paul's, Mr. R. Ford, Mr. Faraday, Mr. Cockerell, R.A. and Mr. George Richmond, to inquire into and determine the site of the new National Gallery, and to report on the desirableness of combining with it the Fine Art and Archæological collections of the British Museum.

THE ARCHITECTURAL ASSOCIATION.

AT the Association, on the 28th of November, a paper on a proposed "Model Society of Architects," was read by Mr. William Young. The reader considered that though there were many architectural societies, or associations of gentlemen meeting for the discussion of architectural papers, there was not any society or association that could be satisfactorily termed "a model society of architects," by which he meant "a society of professed architects, associated in such a manner as to ensure, by some predetermined course of probation, the possession of a certain amount of professional skill by each and every one of its leading members; and of professional eminence openly recognised by the bestowal of honorary distinction, to be alone attained by their having passed with credit through some prescribed test of professional competency."

He wished the Society to set up some standard of professional competency, and to put before all who joined "a ladder of professional merit to climb."

"I suggest, then," said the reader, "that we publicly announce that from and after the close of this present session, the members of the Architectural Association, though each paying the same subscription, and each retaining the same privileges of free discussion, and equal eligibility to administrative office, shall be divided into Fellows, Graduates, and subscribers; that no one shall henceforth be elected an honorary member of the Association, on any pretence whatever; that amateurs as well as architects and students shall be admitted to equal membership—with this exception, that they and Fellows alone be permitted, on payment of 5*l.*, to compound for their annual subscription, on condition of their attending at least one yearly meeting of the Association, if resident within the metropolis, as now defined by our rules.

That Fellows shall consist of those members of the Association who shall be found to have attained thirteen, and Graduates shall consist of such as have attained six of the following points of distinction or professional competency,—that is to say:—

The creditable service of not less than three years as pupil to an architect.

The creditable service of five years as principal clerk to an architect.

The having officiated throughout as architect of any approved private edifice.

The having officiated throughout as clerk of works (under an architect) of any approved private edifice.

The having practised for three years as an architect or building surveyor.

The having officiated throughout a session as chairman of the Association's class of design.

The holding of the D. S. certificate of the Royal Institute of British Architects, &c.

Each of which items or points of professional competency shall be computed as one point towards the creation of a Fellow or Graduate."

He proposed further, that certain points of competency or distinction should be allowed to count as claims to a degree, repeated as often as they should have been conferred upon or have befallen the claimant.

THE COMPOSER OF "IMMANUEL."

WE have pleasure in recording a graceful act on the part of the distinguished Orchestral Society of London, known as the "Amateurs." On the occasion of the rehearsal for the first concert of the present season, on the 28th ult. a silver inkstand was presented, by the members of the orchestra generally, to Mr. Henry Leslie, their conductor, as a small testimony of their sense of the eminent services he has rendered them.

We may be excused departing a little from the strict subject-matter of this Journal, to compliment one who has shown such unwearied devotion to a sister-art; and whose inspirations have already secured for him an elevated position amongst the great writers of the highest class of musical compositions.

From an amateur, Mr. Leslie has become an eminent artist, and his industry in promoting his favourite art amongst the instrumental and vocal performers of the metropolis is as remarkable as his own knowledge of it is profound.

Associated with Lord G. Fitzgerald, Mr. Jekyl, and Sir A. Macdonald, in the formation of the society some twelve years ago, Mr. Leslie has for ten years acted as honorary secretary to it, and for the last three years has filled the more important post of conductor, to the great satisfaction of the members, and with high credit to himself. The inkstand is an elegant production, from the manufactory of Messrs. Hunt and Roskill. It is of scroll pattern, tetragon in form, and Cinque-cento in style, and in design and sentiment symbolical of its purpose. A beautiful figure, allegorical of music, stands on the base of a pedestal, representing the altar of fame, upon which it leans. The base presents four medallions, inscribed with the names of the four great departed writers of symphony,—Beethoven, Mozart, Haydn, and Mendelsohn; and around the altar is entwined a laurel, whose leaves bear the names of the greatest composers, past and present. At the feet of the statue lies an open volume, inscribed with the titles of the chief compositions of the recipient himself. Open music-books, supported by bay-leaves, form the stoppers of the ink-glasses; and the whole composition is creditable to the designer, Mr. Brown.

An address by Mr. Alfred Pollock, responded to by an appropriate answer by Mr. Leslie, expressive of kindly sentiments towards the society generally, terminated the proceedings.

NETLEY ABBEY RUINS.—A correspondent of the *Hampshire Advertiser* complains of the wilful destruction of Netley Abbey. He says that the characteristic mouldings of the arches, and the very capitals of the pillars, are being deliberately broken off and carried away.

Notices of Books.

Memorials of the Lineage, early Life, Education, and Development of the Genius of James Watt. By the late Mr. GEORGE WILLIAMSON. Edited by his SON; and printed for the Watt Club, Greenock, by Thomas Constable, Printer to her Majesty in Scotland. 1856.

THIS is a handsome volume, containing much interesting matter on the subject of which it treats. The volume is graced by an engraved copy of the portrait of Watt in the possession of Mr. John Gray, of Greenock; and as a frontispiece to the second part, which treats more especially of the great inventor himself, as the first does of his forefathers and his native town, there is another portrait, engraved from the original in the possession of Mr. Robert Napier, in which, though not taken in early life, the soft, full eye and the sensitive mouth still speak of the shy and retiring boy and the mother's favourite in a way which testifies that all the hard rubs, the worldly strife, and the ultimate prosperity of the man, did not efface these prominent features in the youthful character. Genius to the last is ever full of youthful freshness of character, and here this is well displayed. There is an engraved portrait of another, though less distinguished man in another part of the volume, namely, Papin, with a likeness too of his celebrated "digester;" and of still greater interest is the lithograph from a photograph of the veritable model of Newcomen's engine in the Hunterian Museum of Glasgow, on which the "queer lad" Watt first tried his "'prentice hand" at engine-work. As we happen to have made allusion to the illustrations in this volume before turning to the volume itself, we may here add that there are various others, including the Clyde map, by Watt's uncle, John Watt; a portrait of the *Comet*, the *first* British steamer; another of the *Atrato*, one of the *last* and most splendid of British steamers to contrast with the *Comet*; both having been brought into existence on the Clyde near Watt's own native town; also an elevation of a proposed cosmopolitan testimonial to Watt, to be erected at Greenock, in the Italian Campanile style; and though last not least in interest, various "specimens of handwriting," or at least *fac similes* of the plain, honest "fist" of the subject of the memoir and of the autographs of others of the Watt family.

It appears from the present publication to be now a settled point that James Watt was born, not at Crawfordsdyke, near Greenock (and indeed in the parish itself), but in the high-street of Greenock, and, singular to say, in a house which stood on the very site where the Watt Club itself, all unconscious of the coincidence, chose to fix its establishment. The discovery looks so like a "thought" that has been fathered by a "wish," that it is but fair to state that strong evidence is adduced to prove that the fact is as stated. James Watt himself had more than once pointed out the old house while it stood as the place of his nativity, and the only wonder is that members of the Watt Club were not aware of this when they set themselves down upon the spot: perhaps even before the proofs were traced out there had been a glimmering "thought" after all that they had settled on sacred ground.

Having, not long since, in noticing Mr. Muirhead's excellent book on Watt, taken the opportunity of reviewing the Life of Watt in a pretty full outline sketch, we shall not return to the subject on the present occasion, although there is much in this volume that is worthy of fresh notice. We may remark, however, before laying down the pen, that the present work contains not a little that is new as to the Watt family and their position in Greenock during the last century. Watt's father was a highly respected magistrate of the town. Originally, he was a builder and contractor, though he served his apprenticeship to a shipwright. Ultimately he became a merchant and shipowner, and, in fact, was elected chief magistrate, although he declined the office. Watt's mother merits reverential notice, as, like the mothers of most men of genius, she was one of a very superior character, and a fine woman, even in personal carriage and appearance. Much of Watt's future career was, no doubt, due to the fostering care and conduct of his mother, to whom he ever turned in the midst of those rebuffs which he perpetually met with at school from those who felt instinctively that he was not fitted to be a playmate of theirs, although, in fact, this did not arise from any unusual brightness of intellect at that time, but rather from his shy and soft disposition. The father of Watt's father was "a mathematician," who taught navigation to the sailors of the thriving port, whose improvement, by the bye, to a great extent, is ascribed to the public-spirited exertions of Watt's own father.

One of the concluding chapters of the "Memorials" contains an interesting account of the origin and history of steam navigation in the Clyde. There were several curious coincidences in the history of Watt to which we pointed attention on a previous occasion; but perhaps there was none more interesting than the fact that while this bright star in the scientific firmament was sinking to his rest, another luminary of a different order, but the first fruits of his inventive genius in its dominion over the waves, arose in the very spot whence he himself had taken his rise: this "luminary" was *The Comet*, the first of British steamers, whose engine was partly made in Greenock itself, and the vessel it was destined for was built at Port Glasgow, close at hand. The coincidence is all the more notable that Watt himself took no part in Bell's invention.

Illustrated Books.—The Campaign in the Crimea: a Historical Sketch. By GEORGE BRACKENBURY, late Secretary at Kadikoi to the Honorary Agents of the Crimean Army Fund. Second series: illustrated by forty plates, from drawings taken on the spot, by WILLIAM SIMPSON. London: Colnaghi, Pall-mall; and Longman and Co. Paternoster-row. 1856.

Private letters testify to the truthfulness of the numerous double-tinted plates of which this tasteful volume and the previous one mainly consist. Together with the explanative letter-press and sketch of the campaign, they form an interesting historical record of what at present seems to stand out as a great and separate war—a short but sharp conflict, which it is to be hoped is really at an end, and is not destined to resume its dreadful course either in its old aspect or in any other. Peace being now restored, the present volume does not come upon us with quite the vivid interest of its predecessor; but though its reception may not be so impressive, it forms a very desirable and valuable complement. Most of the plates on this occasion illustrate either the events of the summer of 1855, or the interior of Sebastopol and its defences.

Orr's Circle of the Industrial Arts.—Vol. I. *The useful Metals and their Alloys.*—Part I. Orr and Co. Amen-corner, Paternoster-row.

THIS new series is intended to form a companion to the very useful and valuable series of *Orr's Circle of the Sciences*, and will embody, as it were, the principles of science in their practical application to the various industrial arts. As in the previous series, various able authors have been engaged to prepare separate articles or treatises on the respective subjects with which they are familiar, each volume even comprising several of such treatises. The shilling part now out is the first of a volume made up of such papers on the useful metals and their alloys, and its value may be anticipated from the fact of such names as Scoffern, Truran, and Fairbairn being amongst those of the authors. A space between page 80 and page 145, we observe, is left in the meantime unoccupied, for an article on Mining and Mining Jurisprudence, by a Government inspector of mines, and which is to appear in the January part. In the outset of the present part, Mr. Scoffern alludes hopefully to Mr. Bessemer's process: "A more beautiful and more immediate application of chemical knowledge to improvement of the iron manufacture," he remarks, and whatever be its upshot, "it is impossible to conceive," and he generously considers it but common justice to give Mr. Bessemer's efforts a cheering and helping word of congratulation and provisional recognition. In this sentiment we concur, all the more heartily that it is in complete harmony with what we have already said on the subject.

Miscellanea.

LUIGI CANINA.—The last months of the life of this deserving *savant* form a string of extraordinary events. His reluctance to being portrayed or otherwise figured, and his charm-making against the *mal' occhio*, were previously mentioned in these pages. Later accounts from Rome assert that Canina died by *self-poisoning*. Being seized by some violent pains, he took *six* (!) of the pills which he had received in London as a patent medicine against that sort of complaint, without consulting a physician at all. Soon afterwards he was seized with still more severe pains, which terminated his life. The pills when examined are said to have been found to contain strychnine.

PROPOSED GREAT HANDEL FESTIVAL IN THE CRYSTAL PALACE.—We are told that the arrangements for this enormous musical exhibition, contemplated in May next, of 2,300 performers, progress in a satisfactory manner. The interest and enthusiasm excited in musical circles are considerable. The Committee of the Sacred Harmonic Society have already received offers of assistance from nearly 3,000 persons desirous of taking part in this great celebration, a number which does not include the Society's own orchestra of 700 performers, nor those members of the musical profession whose position precludes the necessity of applications for engagements. The provincial towns have come forward in a very unanimous manner. Birmingham offers a choir of 400 voices. Under the organisation of Mr. Oliver Mason, the able manager of the Birmingham Festivals, it is suggested that rehearsals should at once commence. Bradford has also a large force of picked Yorkshire vocalists at disposal; while from Liverpool, Leeds, Manchester, York, Hereford, Worcester, Gloucester, Norwich, Keighly, Huddersfield, Lincoln, Exeter, Peterborough, Oxford, Cambridge, Canterbury, Brighton, Leicester, Nottingham, and many other towns, applications to take part continue to be received; and even from places as remote as Dublin, Edinburgh, and Belfast, communications have been made of the desire to be associated in this immense musical gathering. The arrangement of the building to enable all *to hear* will need much consideration.

SOCIETY OF ANTIQUARIES, NEWCASTLE-UPON-TYNE.—The December meeting of this society was held on Wednesday in last week, when there was a numerous attendance of members. Dr. Charlton read a note from Mr. Rippon, of Waterville, announcing the discovery of buried remains of ancient structures in Silloth Bay, where marine works are now in progress. Mr. E. Spoor produced a letter from Mr. Howard, of Blackheath, communicating sketches of marks which he had observed on the oak sides of the Lollards' prison in Lambeth Palace, when visiting that archiepiscopal mansion with the Surrey Archæological Society. One or two other letters were read. Mr. John Fenwick, on behalf of Mr. Grey, of Dilston, presented to the society an inscribed stone, recently found in the Roman station at Corbridge — the lettering sharp and distinct. Dr. Charlton read a letter addressed by Mr. T. Cape, of Bridlington, to Mr. W. H. Brockett, of Gateshead, accompanying a rubbing from the monument of Sir Marmaduke Constable, in Flamborough church, taken for the society in Newcastle. On a plate of *copper*, and in black letter, cut in relief, are lines, of which the *Gateshead Observer*, in its report of this meeting, gives a copy. Mr. Cape, describing some of the more interesting features of the church in which Sir Marmaduke lies buried, mentions the curious fact that, suspended over the rood-loft by a thread, is (November 27) a remnant of a bygone usage—two pieces of white paper, cut in the form of a pair of gloves. Formerly, such emblems of purity were hung over the seat where a deceased spinster had been wont to sit. Dr. Charlton read a short paper on the Boss of a shield, found thirty years ago at Matfen, by some labourers who were making drains.

THAMES TUNNEL.—Amount of tolls in the week ending 6th December—23,038 passengers passed, and paid 95*l.* 19*s.* 10*d.*

ARCHITECTURAL INSTITUTE OF SCOTLAND.—The annual general meeting and *conversazione* of the Architectural Institute of Scotland was held on Monday, the 1st inst. in the George-street Hall, Edinburgh. The attendance of members and guests was large, the hall being well filled. The walls of the room were covered with an extensive collection of photographs and architectural engravings. The photographs which attracted particular attention were three of a size the largest hitherto attempted in Scotland, by Mr. Kibble, of Glasgow. The Lord Provost was called to the chair, and Lord Neaves delivered the introductery address of the session.

The Coventry Water Supply.—The Corporation of Coventry, in July last, fearing the supply of water would not be sufficient for the inhabitants, after an interview with Mr. Hawksley, the engineer, determined to sink their artesian wells lower than they were. The first wells were three in number, of 3½ inches in diameter: they went to the depth of 113 feet. Besides these three wells, there were two springs turned in; but the supply was barely sufficient. For the enlargement of the wells an engagement was entered into with Mr. Docwra, of Waltham-cross, Essex, who, with eight men, commenced boring on the 12th of August. The diameter of the bore was increased from 3½ inches to 9 inches. For several weeks the strata they passed through were chiefly marl and sandstone: at the depth of 170 feet they came to a bed of porous sandstone, which was 14 feet thick; and, after passing this, there was a great increase of water. For the first 120 feet the bore was 9 inches, after that reduced to 7 inches, finally to 6 inches. The supply now, according to the local *Herald*, amounts to nearly 5,000,000 gallons per week, and there is no fear of any want of water. It has been determined not to enlarge or sink the other two artesian wells.

St. Mary's, Spring-grove.—This church was consecrated on Wednesday in last week by the Bishop of London. The estate of Spring-grove, which is the property of Mr. H. D. Davis, has recently been laid out for the erection of first-class mansions, with which it is now thickly studded; and the proprietor has now, at his own expense, erected this new edifice.

Carved Pulpit for St. Anne's, Limehouse.—An elaborately-carved pulpit, in oak, has been completed by Mr. W. G. Rogers, for the church of St. Anne's, Limehouse, from the design of Mr. A. W. Blomfield, architect. It will be fixed by the 30th inst. The working drawings were made by Mr. Harry Rogers.

The Government Wellington Memorial.—The Sculptors' Institute, having caused certain questions to be put to the Chief Commissioner of Works, in respect to the competition for this memorial, the following replies have been given:—"1st. The directions as to size that the model shall bear in proportion to the monument, are set forth most *clearly in the specifications, and competitors must not depart from them*. 2ndly. (The question being, 'Are the designs to be publicly exhibited prior to the decision of the judges?') No further information can be given on the subject of your second inquiry than that afforded by the specifications. 3rdly. The names of the judges cannot be given, as the selection has not yet been made, and will not be made for some time. 4thly. There is nothing in the specifications to bind the Government to employ the author of the best design to execute the work, and no positive obligation can be incurred." The object of the Sculptors' Institute was to promote the confidence of competitors, and the success of the competition, by a mutual understanding on these points.

The Companion to the Almanack.—Sir: As you have given a hint as to the name of the writer of one of the articles in "The Companion to the Almanack for 1857;" and as the authorship of the ordinary article on "Architecture and Public Improvements" during the last three or four years has become known; I should be obliged if you would allow me the use of your pages, to express—especially to those to whom I may have been indebted for information—my very great regret and annoyance at the numerous errors of the press, and the omissions and misstatements, which were not mine, and which there are in both the articles. Not only were no proofs sent for correction—which in the case of the article last referred to (as a general review, necessarily *written* late in the year, and with little self-allowance of time) might be peculiarly required; but elaborate alterations, and unaccountable perversions from the MS. of the article were made, which would go to impute to me culpable ignorance, or very insufficient regard for the merits and the feelings of individual members of that profession which I have humbly endeavoured, through the medium of a work of large circulation, and through many other channels, in some degree to aid in bringing into a right position with the public; and as I need hardly say to those who know me well, at least by the devotion of great pains and exertion. I should wish also,—as you have not distinguished the errors of the "Almanack" from those in the "Companion," to state that I have had no connection with the former, further than having occasionally pointed out errors such as you refer to, but which—or some of them—have, I fear, been repeated in some successive years. At present, with thanks for the opinions which you have kindly expressed, I beg to subscribe myself, sir, your obedient servant,

The Writer of the Articles on "Architecture, and Public Improvements," in the "Companion to the Almanack" for the years 1854-5-6 and 7.

The Proposed Government Offices.—A correspondent, who signs himself "One of the Million," urges us to protest against the proposed under-ground stories, or basement apartments, for printers, compositors, &c. and even for residents, in the Foreign-office and the War-office, to be forthwith erected. "In a hygienic point of view," he remarks, "a basement under the soil is a fearful mistake, where there can be no proper ventilation, where the drainage must be faulty, and where the unfortunate printers and compositors, from the dulness of our atmosphere, rendered more dull from the position of this site, would have to work by artificial light on a great many days in the year, breathing a foul and contaminated air; for it is well known that the parts chosen for this great scheme are on a very low level with reference to the Thames, and that, consequently, the drainage can be anything but perfect." On the other hand, by avoiding a subsoil basement-story for human *burial*, the effect of the buildings would be improved by adding to their elevation, a great fault of our public structures being their lowness of elevation. The Government, it is remarked, ought not to follow mere routine in a matter of this sort, nor to thrust even the humblest citizen underground so long as the lungs are active.

Oxford Architectural Society.—At the last meeting of this society for this term, held on Wednesday, 3rd inst. the Rev. Dr. Bloxam, president, in the chair, Mr. J. M. Derick read a paper on the interesting Monastic Remains at Castle-Dermot, county Kildare. This town traces its origin as far back as A.D. 500, when St. Diarmit founded here an abbey of canons regular. The place was formerly called Disert-Dermot, and Tristel-Dermot, and lastly, Castle-Dermot, from a castle there erected. The only remains marking site of ancient buildings are a small round tower, a circular arch in a ruinous condition, and two ancient crosses. Castle-Dermot was the chief residence of the O'Tooles, from whom was descended the celebrated Archbishop of Dublin, St. Laurence O'Toole, so distinguished by his valour and patriotism during the invasion of Dublin by Strongbow.

The Rivington Pike Water at Liverpool.—The long expected Pike water, says the *Albion* of last week, has at length made its appearance at the threshold of Liverpool, and will ere long constitute the life-blood of the town. A few days ago the pipes along the whole line from Rivington to Prescot were charged with the full pressure, and the experiment was unattended with the slightest accident; and on Friday the Pike water was admitted into the pipes as far as the Old Swan, with an equally satisfactory result. It is understood that as soon as the Prescot reservoirs are full the water will be forwarded to Liverpool. This may, therefore, be expected daily. For the last ten months the Rivington and Anglezark catchment reservoirs have been full, and large quantities of water have occasionally passed over the bye-washes. These reservoirs have a water area of 450 acres, and they contain 2,800,000,000 gallons of water, exclusive of 200,000,000 gallons which will be contained in the Rakebrook and Roddlesworth Reservoirs; constituting in all a four months' supply to a population double that of Liverpool. The latter reservoir has been but recently commenced, the Water Committee having only effected the purchase of the land about six weeks ago. These works, which now literally swarm with men, will, it is believed, be completed in the course of a few months. Some portions of the land have cost the town 40,000*l.* more than they would have done had the scheme not been delayed by a powerful and inconsiderate opposition. The water-shed, in round numbers, is 10,000 acres: the rain falls upwards of 50 inches per annum; and the undertaking will be completed for about 600,000*l.* so that, after all that has been said about the cost of these works, they will be finished at a sum approaching nearer to the original estimate than works of similar magnitude and difficulty. The Kensington and Parkhill service reservoirs have been completed about two years. The Audley-street Reservoir (Everton) is also now nearly completed. A promenade for the public, protected by a parapetted railing, is being formed on the lawn over the arches. It is also under consideration whether a similar promenade shall be made on the Kensington Reservoir. The engineer, Mr. Hawksley, will receive 8,000*l.* when the works are completed, and, adds the *Albion*, will by no means be overpaid. The contract with Messrs. Scott and Howell was determined by the corporation, who placed the work under the superintendence of their own water engineer, Mr. Thomas Duncan. The late Mr. T. H. Statham acted as Mr. Hawksley's agent, though paid by the corporation. Messrs. Docwra and Co. have laid down the pipe line.

Royal Agricultural Society's Premium.—At a council meeting of this society, held on the 4th inst. the premium of 20*l.* for the best essay on the Construction of Agricultural Labourers' Cottages, was awarded to Mr. T. W. P. Isaac, of Bath.

T. G. Messenger's Patent Triangular Tubular Boiler.—This invention consists in surrounding the fire with tubes, which form water spaces, extending from front to back, and secured at each end to sockets cast on inner plates, with sides, and ends, and flanges, to which are secured front and back plates. A water space is thus formed between inner and outer plates, which communicate with the tubes. Water admitted at the lower tubes becomes heated, circulates through all the tubes and water spaces, and rises to an outlet at the upper part of the boiler, from whence it is conveyed to whatever place is required to be heated. The patentee describes its advantages thus:—1st. The amount of surface which is by this arrangement exposed to the fire, reduces the quantity of fuel required very considerably; 2nd. Tubes being used for fire-bars, all burning of the iron is prevented; 3rd. Should any tube become injured, it can be replaced without in the least disturbing the rest part of the boiler. To convert it into a steam-boiler, the patentee proposes to add a steam-chest, communicating with the water spaces.

Fire-proof Safe.—A correspondent describes a large fire and thief proof safe, which has been made for her Majesty's jewellers, Messrs. Tessier and Co. 7 feet 9 inches high, 5 feet wide, and 3 feet deep, and weighing upwards of three tons. The outer casings are made of two strong wrought-iron boiler-plates, and another of hard steel, rivetted together so that it may not be drilled or cut through by any instrument. It was made by Mr. John Tann, of Walbrook.

The Value of Land in Sydney.—The extreme rates which can be obtained in the market for central city property may be understood from the circumstance that a block of land, 69 feet by 67 feet, at the junction of the two busiest streets, realised last week at auction no less than 13,125*l.* Premises with a frontage of 40 feet, in one of these streets, also fetched 4,700*l.* The larger houses in George-street let from 600*l.* or 700*l.* to 1,200*l.* a year.

Cambridge Antiquarian Society.—At the meeting of this society on the 1st instant, Mr. C. H. Cooper, town-clerk, read a catalogue of the plate sent by Queen's College to King Charles I. in the year 1642. The Rev. C. Babington read a paper upon an Athenian inscription. Photographic copies of it were exhibited. It formed part of a Hero-chapel. Its date is probably about the close of the second century of the Christian era.

Toile Metallique.—A specimen of a French invention has been forwarded to us as a useful material for covering skylights liable to breakage from without, and for screens, outside blinds to windows, and other purposes. It consists of simple wire-cloth, interlacing a gelatinous web, elastic enough to admit of being bent or twisted without breaking, and is said to stand both heat and moisture well. A screen over the orchestra in the new concert-room at the Crystal Palace, Sydenham, has been made of it. In Paris it is sold at four francs per square mètre.

Sewers.—The tenders received by the Holborn Board of Works for rebuilding 120 feet of the old Fleet Ditch, formation of a side entrance, and works incidental thereto, Mr. Lewis H. Isaacs and Mr. Sanders Bevan, joint surveyors, were as follow:—

Gardner	£396	0	0
D. Ethiek	287	0	0
Day and Co.	239	10	0
Pearce and Tuckwood	229	0	0
Phillips	227	0	0
Thirst	225	0	0
Abbott (accepted)	196	0	0

TENDERS

For re-building Clothworkers'-Hall, Mincing-lane; Mr. Samuel Angell, architect. The quantities were prepared by Messrs. Roberts and Meakin:—

Ashby and Horner	£42,200	0	0
Piper and Son	41,986	0	0
Cubitt	41,900	0	0
Kelk	41,884	0	0
Lee and Son	41,360	0	0
Lawrence and Sons	39,870	0	0
T'Anson	39,446	0	0
Mansfield	38,935	0	0
Pritchard	38,800	0	0
Lucas	37,235	0	0
Holland	36,296	0	0
Haynes and Eyre	35,486	0	0
Gammon	34,966	0	0
Ashby and Son	34,296	0	0
Jay	33,846	0	0

For St. Charles Church, House, and Schools, Hadfield. Quantities not supplied. Messrs. Weightman, Hadfield, and Goldie, architects:—

Walter Sigley, Ashton-under-Lyne	£6,350	0	0
Farrell & Brownbill, Manchester	5,323	0	0
Samuel Bramall, Manchester	5,303	0	0
Thomas Evans, Macclesfield	5,200	0	0
Ellis and Thorpe, Glossop	5,052	0	0
John Eaton, Staleybridge	4,862	0	0
Thomas Tully, Manchester	4,850	0	0
Robinson and Son, Hyde	4,485	0	0
L. Holroyd, Glossop (accepted)	4,117	0	0